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ABSTRACT

This hearing addressed the general topic of the role of the Federal Communications Commission (FCC) in establishing U.S. policy toward new international communications satellite systems. Statements presented by the following people are included: (1) Mark S. Fowler, Chairman, Federal Communications Commission; (2) David J. Markey, Assistant Secretary for Communications and Information, Department of Commerce; and (3) William J. Schneider, Under Secretary of State for Security Assistance, Science, and Technology, Department of State. Materials submitted for the record include: (1) Commerce Department: letter, dated April 16, 1985 from Kenneth Robinson to Donald Watt re documents bearing on the matter of Intelsat pricing policy; (2) State Department: views of the Department of State on "Flexibility to Compete: Intelsat in an Era of Separate Systems," and a position paper, "Intelsat Legal Opinion concerning the Determination of Intelsat Space Segment Utilization Charges;" (3) Telecommunications, Consumer Protection, and Finance Subcommittee: "Competition in International Transmission Facilities," article by Representative James T. Broyhill; notice of inquiry and proposed rulemaking from the Federal Communications Commission; remarks by Timothy Wirth before the American Enterprise Institute on March 5, 1985; and "A White Paper on New International Satellite Systems," a paper by the Departments of State and Commerce. (JB)

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INTERNATIONAL SATELLITE ISSUES: THE ROLES OF THE EXECUTIVE BRANCH AND FCC

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HEARING

BEFORE THE

SUBCOMMITTEE ON TELECOMMUNICATIONS, CONSUMER PROTECTION, AND FINANCE

OF THE

COMMITTEE ON ENERGY AND COMMERCE
HOUSE OF REPRESENTATIVES

NINETY-NINTH CONGRESS

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INTERNATIONAL SATELLITE ISSUES: THE ROLES OF THE EXECUTIVE BRANCH AND FCC

WEDNESDAY, APRIL 3, 1985

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ENERGY AND COMMERCE,
SUBCOMMITTEE ON TELECOMMUNICATIONS,
CONSUMER PROTECTION, AND FINANCE,
Washington, DC.

The subcommittee met, pursuant to notice, at 2:05 p.m., Hon. Timothy E. Wirth (chairman) presiding.

Mr. WIRTH. Good afternoon.

This afternoon the subcommittee will examine the U.S. Government's policy toward proposals for new international communications satellite systems.

International communications are of immense importance to our balance of trade, our foreign policies, and to our future role in the global economy. This subcommittee has been and will continue to be an active participant in the debate over international telecommunications and trade issues.

Just as technology made our domestic telecommunications policies obsolete, technological forces are at work in the international marketplace as well. We have seen the development and growth of six generations of satellite technology in the short 20-year history of the industry.

Just as the technologies involved are dynamic, so also must be our policies.

We cannot remain wedded to policies that are based on yesterday's world. If we do, we risk imposing immense costs on users and suppliers, and most importantly on the economy as a whole. Late last year, President Reagan determined that new international satellite systems operating apart from Intelsat were in the national interest. The Presidential determination would permit competition for customized telecommunications services, such as the provision of private intracorporate communications networks and the distribution of video programming and services, while protecting Intelsat's switched traffic.

I happen to believe that is a sound approach. It would maintain the good things that Intelsat has brought—cooperation, interconnectivity, and access to every corner of the world. It will also permit the development of new applications of satellite technology without imposing the costs of new applications on those who do not use them.

Unfortunately, the members of Intelsat have been told that the decision to permit alternative systems represents a movement away from a single global system for the provision of switched service. Nothing could be further from the truth.

Those member countries must be presented with a detailed explanation of U.S. policy, safeguards that will be employed to protect Intelsat, and most importantly the rationale behind the policy to permit alternative systems. And those questions, in particular, will be addressed this afternoon to Mr. Schneider from the State Department. It does not seem to me that this job has been done adequately, and we will certainly explore the issue.

Part of the confusion around the world about U.S. policy toward new satellite systems is a function of confusion within our own Government. As we are all aware, U.S. policy in this important area is being shaped by the FCC in the executive branch and within the executive branch, by the Departments of Commerce and State. The relationship between these Departments appears to be worked out, at least for the time being.

It should be clear that the focus of the Commerce Department should be telecommunications policy and that of the State Department, foreign policy.

The immediate question before us this afternoon is the FCC's role in establishing our policy toward new satellite systems. The FCC should examine the various applications before it under the public interest standard, but also measure them against the President's national interest criteria, and reject or grant them on that basis.

While the FCC is a creature of the Congress—as we continually remind Chairman Fowler—and independent of the Executive Branch, the Commission should not be in the position of making foreign policy, nor of interpreting what amounts to American treaty obligations.

Finally, we should remember that Intelsat has been good for the United States and for the rest of the world. We should attempt to build on that basis as we permit new applications of satellite technology and make sure that our partners are kept well aware of our continuing commitment to the Intelsat system.

We have benefited from the first 20 years of satellite technology as have all countries in the world. If we are careful in the development and explanation of U.S. international telecommunications policies, we can guarantee that the next twenty years will be equally beneficial.

We look forward and appreciate having our three distinguished witnesses here this afternoon. Before moving to them, we are delighted to have not only members of this subcommittee, but the distinguished Ranking Minority Member of the Full Committee, Mr. Broyhill.

And I would break all precedents and ask Mr. Broyhill if he has any opening comments that he would like to make.

Mr. BROYHILL. Thank you, Mr. Chairman.

I am delighted to be here. This is a subject in which I have had some interest. I want to welcome our distinguished panel to join us today.

I think it is no secret that I am hopeful that the FCC does grant applications for licenses that have been applied for by those companies that want to be competitive in the international market.

I believe competition in the international satellite communications market will be beneficial to consumers. It will bring down prices, just as the offering of competitive services in domestic communications has been beneficial to consumers as well.

I also want to talk about the fact that the President recently decided to appoint a U.S. Government representative to attend the Intelsat meetings. The purpose of that representative, as I understand it, will be to monitor the meetings in order to assure that all of the instructions that have been given, will be complied with.

I am pleased that the President took my advice on this. A Government observer has been appointed, and I hope that this can become a feature that is utilized for all future meetings as well.

With those remarks, Mr. Chairman, I would yield back to you and to the gentleman from New Jersey.

Mr. RINALDO. Thank you very much.

I certainly want to commend the chairman of the committee for holding this hearing and our distinguished panelists for being here today.

I especially want to thank Chairman Mark Fowler of the FCC. As we know, the FCC issued a Notice of Proposed Rulemaking and inquiry on September 19 of last year which addresses the issues attendant to the establishment of separate satellite systems which would compete with Intelsat. Strong arguments have been advanced on both sides, and I know that this promises to be one of the more difficult issues facing the Commission this year.

But I am confident that under the leadership of Chairman Fowler, the public interest will be protected, which is certainly and should be one of their primary concerns.

The President, in 1984, determined that the authorization of separate systems would be in the national interest. The executive branch felt that the U.S. economic interests would be furthered if less costly international communications service alternatives were available.

The President also reaffirmed the United States' commitment to Intelsat by stating that separate systems be coordinated with Intelsat to assure technical compatibility and to avoid significant economic harm.

In addition, separate systems are only to be authorized for nonswitched private or customized services.

There is no doubt that the U.S participation in Intelsat has served this Nation well. Indeed, the cost of data and voice transmission has fallen by an astronomical amount during the more than 20 years of the entity's existence. Yet the companies that have filed applications with the FCC have argued that Intelsat has not met the unique needs of the large users and argue that separate systems would complement rather than directly compete with Intelsat.

They also argue that the United States is one of the few industrialized nations which does not have an alternative system and that the business community in the United States should not operate at

a disadvantage in meeting the challenges of the global marketplace.

Some difficult technical, legal, and economic issues are raised by these applications. While I believe that the United States should not close it doors to the benefits of new technology, I also want to ensure that Intelsat remains a viable and strong entity, providing communications services on a nondiscriminatory basis to most of the nations of the world.

I again want to thank our witnesses for being here and look forward to the testimony, Mr. Chairman.

Mr. WIRTH. Thank you, Mr. Rinaldo.

Mr. Swift.

Mr. SWIFT. Thank you, Mr. Chairman.

Let me recite a few observations about the issues before us this afternoon.

International communications services are critical to U.S. trade, national defense, foreign policy, and international investment. (p. 4)

The U.S. played a leading role in the creation of INTELSAT in order to further national political, economic, and security objectives. (p. 19)

Intelsat serves the world well. It is established and currently operates an efficient global communications system, promotes closer ties among non-Communist countries, facilitates international business expansions, develops markets for U.S. industry, prevents the spread of a global communications satellite network controlled by the Soviet Union, and is an effective international organization reflecting shared technical and political interests. (p. 26)

Intelsat has an extensive array of advanced spacecraft, a highly talented staff, and enjoys global acceptance and presence. (p. 36) Intelsat has expanded rapidly. With growth, circuit charges have steadily declined—International communications play a central role in the economic development of less developed nations and permits them to participate more fully in the world economy. (p. 8–9)

Possible adverse effects on developing nations are a significant concern, given the increasingly important role communication plays as a catalyst for overall economic development, and given the U.S. longstanding commitment to improving the economic prospects of developing nations. (p. 36)

U.S. policy has been to support to Intelsat as a single global system, as a key element providing all countries of the world access to global communications services. (p. 10)

The Soviet Union uses satellite communications to help cement its relation with client States and to expand its influence with nonaligned nations. The success of Intelsat in providing quality service at decreasing rates to developing countries has prevented the U.S.S.R from extending its service to more than a few non-Communist nations. (p. 24)

Intelsat has been a manifest success, a dramatic example of U.S. leadership, providing developing countries with improved communications at reasonable prices and affordable rates; and has confined the Soviet Intersputnik to a relatively small portion of the world. (p. 18)

Unlimited proliferation of communication satellite systems separate from Intelsat has the obvious potential to inflict significant economic harm on the global system. (p. 27)

A substantial weakening of Intelsat could enhance Soviet efforts to penetrate developing countries through Soviet facilities. (pp. 24–25)

Developing countries have a growing stake in Intelsat. (p. 24)

The United States should maintain its full commitment to Intelsat.

Mr. Chairman, I think that is good advice, and I know our witnesses will recognize it, because it comes—every thought that I have just expressed—from the SIG report written by Commerce and State and sent to the FCC. I raise it today to make the point that there are good reasons for moving forward very carefully.

The U.S. played a leading role in the creation of Intelsat. It is working beautifully, and it has been a major foreign policy success

story. And as we heard too often during the struggle with our domestic phone system, "Let's be sure that this is broke before we fix it."

Thank you, Mr. Chairman.

Mr. WIRTH. Thank you, Mr. Swift.

Mr. Bryant.

Mr. BRYANT. Mr. Chairman, I commend you for calling this hearing to examine the roles of the executive branch in the FCC and authorizing separate systems to compete with Intelsat.

International communications is a key to world commerce, understanding among people, communications between friends and family, and hopefully because of various contacts, world stability and peace.

Encouraging competition in the communications industry seems to be the main goal of the FCC and the administration in all facets of the industry. I am fully supportive of competition, as long as all players play by the same rules and under the same conditions.

When Intelsat was created to establish and maintain a reliable satellite system, competition was not a factor. Intelsat was promoted to foreign countries as a means of peacefully exploiting space technology in a commercially feasible way which would maximize a satellite systems' technological efficiency.

Intelsat has been successful. Even its detractors cannot deny this fact. The systems has grown from the 11 countries which signed the interim agreements to the 109 participants today. It has constantly upgraded its satellite system as new technologies have become available, and it is currently preparing to launch the generation six satellite series.

Other new technologies are also offering competition to the satellite system, including the newly licensed trans-Atlantic fiber optic cable, the TAT-8. Aside from the fact that a competitive environment exists and new technologies are being put into operation as rapidly as they are developed, I am interested in hearing from our witnesses on the problems inherent in separate systems.

I am sure that all of us who have heard of the leaky PBX as we discussed domestic telecommunications issues will want to know how such systems can be set up to ensure that any competing satellite system is not in any way interconnected with public switched message networks at any point of termination or access.

It would seem that such a guarantee would be absolutely necessary to meet the requirement that any separate system prevent significant harm to Intelsat.

I am especially interested in hearing how the FCC intends to proceed with its decisionmaking, so that our national interest in Intelsat is protected and our commitments are met.

Thank you, Mr. Chairman.

Mr. WIRTH. Thank you, Mr. Bryant.

Mr. Bliley.

Mr. BLILEY. I have no comments at this time.

Mr. WIRTH. Mr. Oxley.

Mr. OXLEY. Thank you, Mr. Chairman.

I commend you for calling these hearings today, and I also want to express my appreciation for your consolidating the hearings to make maximum use of the members' and witnesses' time.

I would like to welcome our witnesses, who have all been here many times in the past.

As we have seen, the issue of authorizing international satellite systems is a multifaceted one. The subcommittee hearings in the past have focused on the policy issues involved in allowing competition with Intelsat.

The ultimate question that we sought to determine was, are alternative systems in the national interest?

We heard from representatives of Orion, ISI, PanAmSat and others that such systems are in the national interest. They would offer different types of services at better rates than can currently be provided by Intelsat. They would fill a void that exists in the provision of international telecommunications services.

We heard from Intelsat and from its U.S. signatory, Comsat, that, no, indeed, authorizing these alternative systems would not be in the national interest. Furthermore, it would undermine the viability of Intelsat and upset the entire world system of international communications.

Quite frankly, both sides have very good arguments. But we are now beyond that point. The President, upon recommendation from the State and Commerce Departments, has determined that alternative systems are in the national interest.

That recommendation went on, however, to say that such systems must be technically compatible with Intelsat in order to avoid economic harm to the system, and that such a system should be limited to communications not interconnected with public switched message networks.

Effective coordination with Intelsat is the issue that we should now be discussing.

I look forward to our witnesses' comments as to how that can best be accomplished and how we should proceed to get these competing applications off the ground.

Thank you, Mr. Chairman.

Mr. WIRTH. Thank you very much, Mr. Oxley.

Mr. Bates, do you have an opening statement?

Mr. BATES. No.

Mr. WIRTH. Mr. Dowdy.

Mr. DOWDY. No, sir.

Mr. WIRTH. Gentlemen, thank you very much for being here.

Before beginning, I would like to ask unanimous consent to place in the record three papers related to this: First, the State/Commerce white paper on new satellite systems; second, the FCC's notice of inquiry and proposed rulemaking; and third, the article on this issue by the distinguished ranking minority member, the Congressman from North Carolina, Mr. Broyhill, which recently appeared in Telematics. I ask unanimous consent that all three be placed in the record at this point.

Without objection, so ordered.

[Testimony resumes on p. 103.]

[The articles referred to by Mr. Wirth follow:]

A White Paper on New International Satellite Systems

Senior Interagency Group
on International Communication
and Information Policy

William Schneider, Jr.
Under Secretary for Security
Assistance, Science, and Technology
U.S. Department of State

David J. Markey
Assistant Secretary for
Communications and Information
U.S. Department of Commerce

February 1985

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Introduction

Since 1983, several U.S. firms have filed applications with the Federal Communications Commission (FCC) to establish international communications satellite systems in addition to the global system owned by the International Telecommunications Satellite Organization (INTELSAT). Orion Satellite Corporation, International Satellite, Inc. (ISI), and Cygnus Corporation propose new transatlantic communications systems, and RCA American Communications, Inc. (RCA) has applied to use capacity on a U.S. domestic satellite to provide international service. Pan American Satellite Corporation (PanAmSat) proposes to establish a system which would serve Latin America. In addition to existing and planned regional satellite systems independent of INTELSAT, other transoceanic satellite systems are under consideration abroad. Approved and proposed transatlantic submarine cable communications facilities, many of which are actually or potentially competitive with INTELSAT, are pending as well.

Focus of Report

The filing of U.S.-based satellite system applications with the FCC prompted action by the Executive branch, which has special responsibilities in this field under the Communications Satellite Act of 1962, as amended (47 U.S.C. 701 et seq.), including the responsibility to determine whether additional U.S. international satellite systems are "required in the national interest." The Senior Interagency Group on International Communication and Information Policy (SIG) reviewed U.S. international satellite policy to determine whether, and under what conditions, authorizing satellite systems and services in addition to INTELSAT would be: (a) consistent with prevailing U.S. law, practice, and international treaty obligations; (b) compatible with sound foreign policy and telecommunications policy goals; and, (c) in the U.S. national interest. 1/

1/ The SIG is composed of representatives of the Departments of State, Justice, Defense, and Commerce; the Offices of Management and Budget, Science and Technology Policy, Policy Development, and the U.S. Trade Representative; the National Security Council; the Central Intelligence Agency; the U.S. Information Agency (USIA); the Board for International Broadcasting; the Agency for International Development; and the National Aeronautics and Space Administration. Commerce and State co-chair the SIG and USIA serves as vice chair.

The Executive agencies represented on the SIG undertook a study and reached a unanimous position in favor of new entry, subject to certain limitations. A recommendation subsequently was made to the President by the Secretaries of State and Commerce. The President determined on November 28, 1984, that international satellite systems separate from INTELSAT were required in the U.S. national interest, subject to certain conditions. Specific criteria relating to the President's determination were then forwarded to the FCC by the Secretaries of Commerce and State jointly. See Appendixes A and B.

This report provides background information regarding the President's determination, and it also provides information on important regulatory and other parallel measures which are desirable to ensure that the Executive branch's fundamental policy goal -- an efficient and responsive international communications environment -- is achieved. The discussion here focuses on the major communications and information policy issues raised by the applications before the FCC. It addresses commercial, trade, and legal matters, and also examines major U.S. foreign policy interests and concerns.

This report does not seek to resolve all of the questions that have been raised regarding new international satellite systems nor to direct action by the FCC on specific pending applications. It does, however, consolidate much of the extensive analysis that has been undertaken by the Executive branch and sets forth the requirements applicable to any system the FCC may eventually authorize.

The Executive branch has concluded, in brief, that it is technically feasible, economically desirable, and in the national interest to allow new entry by U.S. firms into the international satellite field. Customers should be afforded both the new service options and the benefits of competition among customized service providers that new entry promises. This can be accomplished, moreover, while maintaining the technical integrity of the INTELSAT global system and avoiding significant economic harm to that system. U.S. foreign policy, and international communications and information policy, require a continued strong national commitment to INTELSAT as "a single global commercial telecommunications satellite

system as part of an improved global telecommunications network." 2/ But our national commitment to INTELSAT and other important goals can be accommodated, provided that new international satellite systems and services are authorized and regulated along the lines discussed in this report.

Specifically, this report concludes that --

(a) Additional international satellite facilities should be permitted by the FCC, provided they satisfy conventional regulatory requirements, but the new entrants must be restricted to providing customized services, as defined in this report. When one or more authorities abroad authorizes use of such new systems, the United States with those authorities will enter into consultation procedures with INTELSAT under Article XIV(d) of the INTELSAT Agreement. Construction permits may be issued at the conclusion of regulatory proceedings to those applicants meeting the public interest requirements of the Communications Act. Final licenses and authorizations should not be issued, however, until after INTELSAT consultation is completed.

(b) The FCC should examine allowing U.S. carriers and users in addition to the Communications Satellite Corporation (Comsat) to have cost-based access to the INTELSAT space segment for customized services. This matter can be pursued on a parallel track, as the pending applications are being processed, however, and does not constitute a condition to FCC action on these applications.

(c) The United States should, and will, maintain its full commitment to INTELSAT, while permitting technology-driven competition in this important sector to evolve.

I. THE INTERNATIONAL COMMUNICATIONS MARKETPLACE TODAY

Industry Participants

International communications today constitutes one of the most rapidly growing parts of the overall telecommunications industry, and the services

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2/ Preamble, Agreement Relating to the International Telecommunications Satellite Organization "INTELSAT," TIAS 7532, 23 UST 3813, 3814 (1973).

involved are critical to U.S. trade, national defense, foreign policy, and international investment. The services involved traditionally have been categorized as "voice" or "record," "private line" or "public-switched," and, historically, the American Telephone and Telegraph Company (AT&T) has handled most of the international voice traffic. Six major international record carriers (IRCs) -- ITT Worldcom, RCA Communications, MCI International, TRT Communications, Western Union, and FTC Communications -- currently share the telex and telegraph components of the $2.8 billion a year international communications market. AT&T and the IRCs competitively offer international private line services, generally used by major corporate and Government users for data and voice communication. 3/

There are two principal international transmission modes: submarine cables and communications satellite facilities. The submarine cables which provide U.S. international service are owned collectively by AT&T, the IRCs, and their foreign correspondents. 4/ Seven transatlantic cables now terminate in the United States and an eighth, 38,000-circuit, fiber optic cable has been approved by the FCC. 5/ U.S. international satellite circuits are provided by Comsat, which has functioned as a "carrier's carrier" and holds a 23 percent interest in INTELSAT, the 109-nation organization that owns and manages the global satellite system. 6/ Comsat's investment share is adjusted annually to reflect U.S. use of the INTELSAT system.

3/ See Overseas Communications Services, 92 FCC 2d 641 (1982). See also MUI, Inc. v. FCC, 673 F.2d 539 (D.C. Cir. 1982) (and citations therein); TAT-5, 13 FCC 2d 263 (1968). See generally Comsat Rate Case, 56 FCC 2d 1101 (1975), aff'd, 611 F.2d 883 (D.C. Cir. 1977); Comsat Study, 77 FCC 2d 564 (1982); Comsat Structure Decision, 52 P. & F. Radio Reg. 2d 153 (1982); Schwartz, Comsat, the Carriers, and the Earth Stations: Some Problems With 'Melding Variegated Interests,' 76 Yale L.J. 441 (1967).

4/ Such correspondents typically consist of government-owned (or, in the case of Britain and Japan, "privatised") postal, telephone, and telegraph administrations (PTTs) that both provide and regulate domestic and international communications services.

5/ See Applications of AT&T et al. (File No. ITC 84-072), FCC Mimeo 84-240 (June 8, 1984). In addition, two sets of applications to install noncarrier-owned transatlantic cables are now before the FCC.

6/ The FCC has recently increased the range of "authorized users" to whom Comsat may provide services. Authorized User II Policy (CC Dkt 80-170), FCC Mimeo 84-633 (Dec. 19, 1984).

The U.S. earth stations used to provide access to the satellites are now collectively owned by Comsat, AT&T, and the IRCs, although the FCC recently made changes in this regard. 7/

U.S. Policy Goals

The international communications and information policy goals of the United States are the following:

- To enhance the free flow of information and ideas among nations;
- To promote harmonious international relations and contribute to world peace and understanding through communications;
- To promote, in cooperation with other nations, the development of efficient, innovative, and cost-effective international communications services responsive to the needs of users and supportive of the expanding requirements of commerce and trade;
- To ensure the continued technological and economic strength and leadership of the United States in the communications, information, and aerospace fields;
- To expand U.S. private sector investment and involvement in civil space and related activities;
- To promote expanded international trade and to ensure opportunities to U.S. firms to participate in such trade;
- To promote the continuing evolution of an international configuration of communications services that can meet the needs of all nations of the world, with attention toward providing such services to developing nations;
- To ensure efficient utilization of the geostationary orbit and the electromagnetic radio frequency spectrum;
- To promote competition and reliance on market mechanisms, as feasible, and to foster cost-based pricing, quality service, and more efficient use of resources; and,
- To ensure the needs of national defense, security, and emergency preparedness are satisfactorily met.

7/ See Earth Station Ownership, 90 FCC 2d 1958 (1982); Modification of Earth Station Policies (CC Docket No. 82-540), FCC Mimeo 84-605 (released Dec. 18, 1984). See generally Twenty-First Comsat Report to the President and the Congress at pp. 2-3, 6-7 (September 17, 1984).

These basic policy goals are mutually supportive. There is a continuing need to review and assess their requirements. Satisfying all of these goals to the maximum extent possible requires striking a reasonable balance.

Evolution in International Communications

The U.S. international communications business has experienced sustained rapid growth and fundamental regulatory changes in recent years as technology has advanced, demand has grown, and the level of competition has increased. International telephone calls increased more than 15 percent in 1984, for example, producing revenues of over $2 billion. The IRCs in 1984 are expected to report operating revenues exceeding $650 million, up from $617 million in 1983. Overseas circuits used by the IRCs grew to 2,874 in 1983, an 8.2 percent increase over 1982 levels, despite depressed economic conditions worldwide. Changes in FCC "gateway" and related regulations have permitted the IRCs to offer an expanding customer base improved and more responsive services. Under the Record Carrier Competition Act of 1981 (Public Law No. 97-130), Western Union was permitted to reenter the international record communications business. GTE Sprint and MCI, important U.S. competitive carriers domestically, have entered the international field and will both begin providing international telephone service in 1985. 8/

Domestically, the continuing advent of International Direct Distance Dialing (IDDD), which enables subscribers to dial a growing number of nations without operator assistance, has facilitated international telephone calling. By 1983, IDDD capability existed in 86 locations around the world and about 60 percent of U.S. telephone subscribers enjoyed this capability. Continued installation of advanced electronic switching is expected to boost U.S. IDDD penetration to about 67 percent by the end of 1984. This should have a positive effect on the overall volume of public-switched message traffic.

8/ See generally 1985 U.S. Industrial Outlook, Ch. 31 (U.S. Department of Commerce, 1985). In contrast to the domestic sector, where record communications are marginally significant, differences in language and time zones make international record communications services commercially critical.

Steadily growing demand for conventional international communications services is reflected in other statistics as well. Comsat's World Systems Division, for instance, obtains circuit capacity from INTELSAT and provides that capacity to other U.S. international carriers for telephone, data, telex, and facsimile services. The volume of Comsat's communications business through INTELSAT increased 6 percent between 1982 and 1983, again despite a worldwide economic downturn, and notwithstanding the loading of a new transatlantic cable (TAT-7), which shared traffic growth with the satellite network. In 1983, Comsat's regulated satellite services accounted for most of the firm's revenues of $440 million and net income of $50 million. The FCC in 1982 authorized Comsat to retail certain services (such as television transmission service) directly to end-users, altering its traditional policy of restricting Comsat to serving as a "carrier's carrier." The FCC's legal authority to do so was sustained on appeal, although its decision was remanded for further consideration. 9/ Recently, the FCC again ruled that expanded retail activities by Comsat are in the public interest and this action should have a beneficial effect on the volume of Comsat's business. 10/

The INTELSAT system and the number of facilities which access INTELSAT's satellites have expanded rapidly. INTELSAT's 15 satellites today serve 173 countries, territories, and possessions directly or indirectly, and the organization leases satellite capacity to 26 nations for domestic services. Nineteen new earth stations and 39 new international communications antennas were added in 1982 alone. As of November 1984, there were 198 INTELSAT earth station sites and 293 international antennas in 157 countries, dependencies, and areas of other special sovereignty.

INTELSAT now handles about two-thirds of the world's transoceanic telecommunications traffic and most international television transmissions. Demand for full-time voice, record, and data services for INTELSAT grew by 18 percent in 1982; these services accounted for about 86 percent of the total

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9/ See Modification of Authorized User Policy, 90 FCC 2d 1934 (1982), rev'd sub nom. ITT Worldcom v. FCC, 725 F.2d 732 (D.C. Cir. 1984).

10/ See note 6, above.

satellite utilization revenue received by INTELSAT that year. The most recently published INTELSAT annual report states that INTELSAT expects continued strong growth of 15 percent annually on an expanded base of conventional international traffic over the 1988-2000 time period. 11/ 1983 INTELSAT Annual Report at pp. 10, 17 (March, 1984).

With the growth of the INTELSAT system, circuit charges have steadily declined. The annual charge for a 1965 INTELSAT I "Early Bird" half-circuit, for example, was $32,000, while the 1982-83 charge for an equivalent, though technically superior, half-circuit was $4,680. There is disagreement, however, over whether the substantial INTELSAT charge reductions over the past decades have been fully reflected in the prices which Comsat has charged U.S. international carriers or the prices which those carriers have charged their customers. At present, end-user prices for many international satellite services both here and abroad typically are between two to ten times INTELSAT's charges. 12/ U.S. international communications costs, moreover, often are very substantially above those for comparable domestic service.

INTELSAT has continued to grow and to prosper in an increasingly competitive international communications environment. Since 1981, the FCC has sanctioned certain international communications services using U.S. domestic satellite systems. At present, U.S. and Canadian satellites are used to provide certain services throughout North America and the Caribbean. 13/ Additional proposals for such transborder satellite service will be the object of consultations with

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11/ 1983 INTELSAT Annual Report at pp. 10, 17 (March, 1984). There are indications that INTELSAT's rate of growth declined in 1983 and 1984, but official statistics have not yet been published. Similarly, it has been suggested that the mix of traffic also has changed. The statistics here are from the most recent official reports available to the public.

12/ See "Price of International Satellite Service: Comsat vs. INTELSAT" (NTIA Rep. No. 83-122); Statement of then-INTELSAT Director General-elect Colino Before the Senate Subcommittee on Arms Control, Oceans, International Operations, and Environment, 98th Cong., 2d Sess., at p. 33 and Appendix 5 (Oct. 19, 1983); Colino, "The INTELSAT System: An Overview," in The INTELSAT Global Satellite System (S. Alper & J. Pelton, eds.)(AIAA, 1984).

13/ See Transborder Satellite Video Services, 88 FCC 2d 258 (1981); FCC Common Carrier Bureau Order No. 6119 (1983).

INTELSAT. INTELSAT recently accelerated its plans and now offers a number of international communications services aimed particularly at meeting specialized and sophisticated business community needs.

Significance to Industry and Government

International communications services constitute an essential component of international trade today. Efficient and effective international communications are necessary to international finance, to facilitate the production and shipment of goods, and to manage U.S. off-shore operations, assets, and investments. 14/ International communications are also critical to the continued development of U.S. trade in services, which exceeded $40 billion in 1982. 15/ International communications, moreover, play a central role in facilitating the further economic development of less developed nations, thus permitting these countries to participate more fully in the world economy and contributing to peace, stability, and greater understanding.

Space communications is a major part of the aerospace industry, one of the world economy's most important "high-tech" or "sunrise" sectors, and an area where the excellence of U.S. manufacturing techniques and high technologies is reflected in the preeminence of the U.S. aerospace industry. U.S. aerospace trade is forecast to accelerate in 1985 as both exports and imports reach record highs. Aerospace exports should climb to a projected $18.9 billion, while imports will rise to $5.0 billion. The resultant trade surplus of $13.9 billion will be more than 30 percent above the level recorded in 1984. Total U.S. aerospace employment will rise an estimated 4 percent in 1985 to 739,000, with an estimated gain of 7 percent in the number of production workers. 16/

14/ See generally Bryant & Krause, World Economic Interdependence in Setting National Priorities: Agenda for the 1980s (J.A. Pechman, ed., Brookings Inst., 1980) at pp. 71, 74; Saunders, Warford & Wellenius, Telecommunications and Economic Development (World Bank, 1983) at pp. 100-02.

15/ See, e.g., Long-Range Goals in International Telecommunications and Information at p. 155 et seq. (NTIA, 1983)(reprinted as Senate Commerce Committee Print No. 98-22, 98th Cong., 1st Sess.); 1985 U.S. Industrial Outlook at p. 38 (U.S. Department of Commerce, 1985).

16/ See 1985 U.S. Industrial Outlook, at p. 37-9 (U.S. Department of Commerce, 1985).

Existing Policies and Objectives

U.S. policy regarding international public-switched message services via satellite has centered on the 1962 Satellite Act and associated Executive Orders for more than 20 years. The 1962 Act authorized the establishment of Comsat and franchised it to serve as the U.S. private sector commercial participant in the INTELSAT system.

The established foreign and domestic policies of the U.S. Government in this area seek to further the basic goals which are outlined above. These policies include:

-- Adhering to the requirements and provisions of the Communications Act of 1934, as amended (47 U.S.C. 151 et seq.) and the 1962 Satellite Act, as amended (47 U.S.C. 701 et seq.);

-- Complying with the terms of the INTELSAT Agreement (TIAS 7532) and all the privileges and obligations the Agreement provides its Parties and Signatories;

-- Supporting INTELSAT as "a single global commercial telecommunications satellite system as part of an improved global telecommunications network" (Preamble, INTELSAT Agreement), and as a key element providing all countries of the world access to global communications services;

-- Concurring in the development, separate from INTELSAT, of customized, regional, and transborder satellite services where technical or economic consultation, or both, is accomplished as required under the terms of the INTELSAT Agreement and such systems are consistent with the Agreement;

-- Pursuing a nondiscriminatory satellite launch policy;

-- Adopting domestic communications policies which emphasize reduced Government regulation, wherever feasible, and increased reliance on market forces in the provision of communications and information services;

-- Advocating and adopting international communications policies which stress reliance on free enterprise, competition, and free trade, wherever feasible, with full recognition that provision of international communications and information services involves the joint undertakings among sovereign nations requiring mutually acceptable agreements to accommodate differing national policies;

-- Supporting and fostering the development of a diversity of international communications technologies and modes, including fixed, mobile, and broadcast satellite, microwave, terrestrial and undersea cable, and optical fiber;

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-- Supporting and undertaking bilateral consultations and agreements, as well as multilateral deliberations in appropriate international forums, to ensure order and cooperation in the evolution of international communications and information services.

Already Competitive Environment

It is important to bear in mind that the pending proposals to establish U.S. international satellite systems separate from INTELSAT represent only possible incremental -- not fundamental -- competitive change in an international communications environment which is already characterized by some competition. The present proceeding thus does not pose choices directly comparable to those presented in 1968 when the FCC approved domestic, facilities-based competition by companies, such as MCI, with the dominant long-distance carrier, AT&T, or in 1970, when the FCC considered adoption of an "open skies" policy regarding proposed U.S. domestic satellite systems. 17/ Despite significant regulation of the international communications industry both here and abroad, there nevertheless is competition between the extensive submarine cable facilities owned by terrestrial carriers and the satellite and earth station facilities owned by Comsat and INTELSAT. This competition stands to increase when high-capacity fiber optic cables -- both carrier-owned and, perhaps, noncarrier-owned as well -- become operational, especially if the traditional "balanced loading" rules governing the apportionment of traffic are changed.

There has also been competition among satellite systems for several years. As noted, U.S. and Canadian domestic satellite systems, for instance, have been authorized to handle traffic that is technically "international" -- involving Canada, the United States, and Caribbean nations and locations. "Domestic-overseas" traffic to Alaska, Hawaii, and U.S. possessions which previously transited Comsat and INTELSAT facilities, is now handled by U.S. domestic satellite systems. 18/

17/ See generally Washington Util. & Transp. Comm'n v. FCC, 513 F.2d 1142 (9th Cir.), cert. denied, 423 U.S. 836 (1975); Network Project, Inc. v. FCC, 511 F.2d 786 (D.C. 1975).

18/ See, e.g., Colino, International Cooperation Between Communications Satellite Systems: An Overview of Current Practices and Future Prospects, 5 J. Space L. 65, 92 (1977).

Nor is this emerging actual and potential competition limited to the Western Hemisphere by any means. Regional satellite systems operate in Southeast Asia and Europe and are planned for the Middle East and, perhaps, Africa as well. Several European administrations also plan soon to deploy "domestic" satellite systems which are capable of providing transatlantic service. The "footprints" of the planned British and French domestic satellite systems, for example, cover much of the eastern half of the United States and Canada. Extensive submarine cable facilities, moreover, are under construction in the Mediterranean, Indian Ocean, and Pacific region. There is no evidence, in this regard, that these new communications systems have had any adverse impact on the technical or economic integrity of the INTELSAT global system.

II. INSTITUTIONAL LIMITS ON COMPETITION

The United States since the early 1970s consistently has sought to reduce outmoded communications regulation and to eliminate unnecessary barriers to competition chiefly domestically, but internationally as well. Important changes and regulatory reforms have been accomplished. 19/ All recognize, however, that achieving a regulation-free international communications environment is not foreseeable at this time. There will remain significant U.S. limitations on competition in international communications as well as limits imposed by communications administrations abroad. Understanding some of these limits on potential competition is important to addressing the issues presented by the satellite applications pending before the FCC and reinforces our assessment that these applications imply continued evolutionary development, not radical or disruptive change.

Regulatory Constraints

There are, to begin with, a number of statutory requirements and limitations which bear on the level and intensity of potential competition in the international communications field. To enter the international communications satellite business, U.S. firms require FCC permission under title III of the 1934 Communications Act, provisions of title II of that Act (for would-be common carrier entrants), as well as provisions of the 1962 Satellite Act. The FCC is required by

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19/ See Computer and Communications Industry Assoc. v. FCC, 693 F.2d 198 (D.C. Cir. 1982); Detariffing International Enhanced Services, FCC Docket Nos. RM-4435, CC 83-1230 (1983).

law to make an affirmative "public interest" finding prior to issuing construction permits and licenses to use the radio frequency spectrum. 20/ Considerable regulatory review of proposed systems typically is entailed. It is also relevant in this regard to note that given spectrum use limitations and international procedures governing the use of the geostationary orbital resource, there are significant technical constraints on possible entry into international satellite communications. 21/

Entrants proposing to operate on a common carrier basis are subject to many provisions of title II of the 1934 Communications Act (e.g., 47 U.S.C. 214). Under title II, the FCC must generally find that the public interest, convenience, and necessity will be furthered by approving an additional international common carrier facility. Existing common carriers, moreover, must generally receive permission to make use of new facilities. As with other regulatory agencies, the FCC is required to weigh competitive factors when it functions as a "gatekeeper" with respect to common carrier communications. 22/ Under present law, however, the FCC may not legally authorize new common carrier systems simply to foster competition. 23/ It must instead make affirmative public interest findings that competition, for example, will spur technological progress, increase efficiency, and more rapidly expand customer choice. 24/

20/ See, e.g., Telocator Network of America v. FCC, 691 F.2d 525, 548 (D.C. Cir. 1982) (and citations therein).

21/ See generally Orbital Locations, 54 P. & F. Radio Reg. 2d 550 (1983); Orbital Spacing, 54 P. & F. Radio Reg. 2d 577 (1983); Robinson, Regulating International Airwaves: the 1979 WARC, 21 Va. J. Int'l L. 1, 44 (1980).

22/ See, e.g., FMC v. Aktiebolaget Svenska Amerika Linien, 390 U.S. 238, 240-44 (1968); Network Project v. FCC, 513 F.2d 786 (D.C. Cir. 1975). Cf. City of Lafayette v. Louisiana Power & Light Co., 435 U.S. 389, 406 (1978).

23/ See, e.g., FCC v. RCA Communications, 346 U.S. 86, 93 (1953); Hawaiian Teleph. Co. v. FCC, 498 F.2d 771, 778 (D.C. Cir. 1974).

24/ See United States v. FCC, 652 F.2d 72, 91, 98-99 (D.C. Cir. 1980) (en banc). See generally Van Deerlin, The Proposed Deregulation of Domestic Common Carrier Telecommunications, 69 Cal. L. Rev. 455 (1981); Palenberg, International Telecommunications: Proposed Deregulation of Overseas Services, 23 Harv. Int'l L.J. 214 (1981).

Executive Responsibilities

In addition to the limitations on entry and competition contained in titles II and III of the Communications Act, section 102(d) of the Satellite Act recognizes the foreign policy, trade, and national security aspects of international satellite communications and provides that the President is responsible to determine whether additional international satellite systems are required to meet unique governmental needs or are otherwise required in the national interest. 25/

The term "national interest" is not defined in the Satellite Act, but it encompasses considerations broader than those implicit in the FCC's regulatory "public interest" standard 26/, a standard which the courts have ruled is not limitless. 27/ "National interest" is within the mandate of the Executive branch and includes such factors as general competition policy, whether entry will advance technological progress and innovation, promote U.S. international trade in goods and services, expand the international communications options available to the U.S. business community, and further overall U.S. spectrum management goals. Foreign policy and national security considerations are also important aspects of the national interest, and matters which are the Constitutional responsibilities of the Executive. The FCC in the past has generally deferred to Executive branch views on policies which are not directly within its regulatory purview. 28/ In sum, the "national interest" standard in the 1962 Satellite Act should be read as according the Executive branch responsibility to determine the compatibility of

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25/ "Unique governmental needs" are not at issue here. None of the applicants now before the FCC maintains that its system will meet such needs nor has any agency identified unique needs that might thus be served.

26/ See, e.g., Domestic Satellites, 22 FCC 2d 86, 133 (App. D)(1970); Authorized Users, 6 FCC 2d 593, 594-95 (1962). See generally Legislation Note, The Communications Satellite Act of 1962, 76 Harv. L. Rev. 388, 389 (1962). Cf. Telemanson v. United States, 386 F.2d 811, 812 (1st Cir. 1967); Gardels v. CIA, 484 F. Supp. 368, 371 (D.D.C. 1980).

27/ See NAACP v. FPC, 425 U.S. 662, 669 (1976); National Organization for Women v. FCC, 555 F.2d 1002, 1017 (D.C. Cir. 1977).

28/ See, e.g., United States v. FCC, 652 F.2d 72, 90 (D.C. Cir. 1980)(en banc); AT&T Co. (NE Corridor Light Guide System), 51 P. & F. Radio Reg. 2d 717, 725 (1982).

responsibility to determine the compatibility of proposed international satellite systems with the broad range of U.S. programs and policies affected by such enterprises.

International Obligations

In addition to the limitations on competition implicit in the 1934 Communications Act and the special "national interest" criterion in the 1962 Satellite Act, U.S. international obligations are relevant. Certain responsibilities under Article XIV of the INTELSAT Agreement are also discussed in the Memorandum of the Legal Adviser of the Department of State which was transmitted to the FCC in 1984 and which is set forth as Appendix B to this report.

The INTELSAT Agreement entered into force for the United States on February 12, 1973. 29/ While the INTELSAT Agreement implicitly acknowledges that nations party to the Agreement retain the sovereign right to establish satellite telecommunications facilities separate from the INTELSAT system, the Agreement establishes: (1) a generalized obligation of the parties to act in a manner consistent with and in furtherance of the principles stated in the Preamble and other provisions of the Agreement (Article XIV(a)); and (2) a consultation process to be undertaken before a nation or its designated operating entity (a "Signatory") establishes, acquires, or utilizes separate, non-INTELSAT space segment facilities to meet its telecommunications requirements (Article XIV).

Article XIV(d) of the INTELSAT Agreement addresses the consultation obligation with regard to international public telecommunications services. In substance, it provides that a nation member or its Signatory shall furnish all relevant information to INTELSAT and shall consult with INTELSAT: (1) to ensure technical compatibility of the contemplated satellite facilities with the use of the radio frequency spectrum and the geostationary orbital space by the existing or planned INTELSAT satellites; and (2) to avoid significant economic harm to the global system of INTELSAT. At the conclusion of the consultation process, the INTELSAT Assembly of Parties (the principal organ of INTELSAT, composed of the

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29/ See Agreement Relating to the International Telecommunications Satellite Organization "INTELSAT", 23 UST 3813, TIAS No. 7532 (1973). See also Simmarian, Interim Arrangements for a Global Commercial Communications Satellite System, 59 Am. J. Int'l L. 344 (1965).

representatives of all member nations) makes findings in the form of recommendations on the subjects of the consultation and further regarding the assurance that the proposed satellite facility will not prejudice the establishment of direct telecommunications links through the INTELSAT space segment among all the participants in the proposed system.

Considering the wide participation in INTELSAT, most of the contemplated separate satellite systems would involve two or more INTELSAT members. It is common practice for the INTELSAT members contemplating the establishment of separate satellite facilities to meet their international public telecommunication consultation requirements by consulting jointly with INTELSAT in accordance with the provisions of Article XIV(d) of the Agreement.

The term "public telecommunications services" is defined in Article I(k) of the INTELSAT Agreement as meaning:

> (F)ixed or mobile telecommunications services which can be provided by satellite and which are available for use by the public, such as telephony, telegraphy, telex, facsimile, data transmission, transmission of radio and television programs between approved earth stations having access to the INTELSAT space segment for further transmission to the public, and leased circuits for any of these purposes; but excluding those mobile services of a type not provided under the Interim Agreement and the Special Agreement prior to the opening for signature of this Agreement, which are provided through mobile stations operating directly to a satellite which is designated, in whole or in part, to provide services relating to the safety or flight control of aircraft or to aviation or maritime radio navigation.

23 UST 3813, 3816

At least one of the current U.S. applicants has contended that consultation with INTELSAT should not take place pursuant to Article XIV(d) but rather pursuant to Article XIV(e). A consultation pursuant to Article XIV(e), which deals with "specialized telecommunications services requirements," would not include the subject of possible significant economic harm to the global INTELSAT system. A proposed satellite system, however, may well provide "public telecommunications services" (as defined in the INTELSAT Agreement) even though the applicant characterizes its endeavor as a noncommon carrier, and therefore, "private" satellite system.

Consultation within the INTELSAT framework occurs pursuant to the definitions contained in the INTELSAT Agreement. U.S. domestic communications policy currently recognizes a number of distinctions between traditional common carrier and other communications services. 30/ Such distinctions, however, do not necessarily determine the international obligations of the U.S. Government. The United States will continue to consult with INTELSAT pursuant to Article XIV(d) regarding those satellite systems which would provide "international public telecommunications services," as discussed in the Legal Memorandum appended to this report. See Appendix B..

Consultation pursuant to the INTELSAT Agreement need not be protracted. Indeed, Article XIV(f) provides that INTELSAT shall make its recommendations within a period of six months from the date of commencing the consultation procedures. In practice, however, such a consultation cannot commence until the U.S. Government or the U.S. Signatory (Comsat) furnishes INTELSAT with all relevant information. In the past, delays in consultation have occurred because the information required of an applicant by the FCC in making its regulatory decision on initial authorization is not identical to that information relevant to the consultation with INTELSAT.

The United States is committed to ensuring that non-INTELSAT satellite systems are technically compatible with existing and planned INTELSAT satellites, and to avoiding significant economic harm to the global INTELSAT system. Accordingly, the Executive branch will initiate consultations with INTELSAT only for those non-INTELSAT systems which it believes meet the technical and economic conditions described in the INTELSAT Agreement. The United States will continue to consult with INTELSAT in good faith; therefore, the possibility cannot be excluded that, following the consultation process, the Executive branch might find that final regulatory authorization should not be granted.

30/ See, e.g., National Assoc. of Regulatory Util. Comm'rs v. FCC, 525 F.2d 630, 640 (D.C. Cir. 1976); National Assoc. of Regulatory Util. Comm'rs v. FCC, 533 F.2d 601, 608 (D.C. Cir. 1976). See also CCIA v. FCC, 693 F.2d 198 (D.C. Cir. 1982).

The consultation with INTELSAT would normally end with a recommendation being made by the INTELSAT Assembly of Parties. Such recommendations are not binding on the United States, although the U.S. Government will carefully consider all recommendations. It will go forward only with systems it deems consistent with its obligations to INTELSAT.

III. FOREIGN POLICY CONSIDERATIONS REGARDING INTERNATIONAL SATELLITES

Addressing the issues raised by the proposed establishment of U.S. international satellite systems separate from INTELSAT requires consideration of U.S. foreign policy objectives. These objectives have been considered within the Executive branch and do not constitute an appropriate matter for independent determination by a regulatory agency. Here, however, the major foreign policy matters that were weighed are generally discussed to further understanding of the President's determination.

In his September 1983 letter to Chairman Charles H. Percy of the Senate Committee on Foreign Relations, Secretary of State George P. Shultz reiterated the basic foreign policy objectives of the United States in international communications, and they are similar to those enumerated in detail above: "To promote an environment in which ideas and information can flow freely among nations, to support the advancement of international commerce through the efficient and innovative use of communications resources, and to expand information access and communications capabilities of developing countries."

The 1962 Satellite Act reflects these objectives and others which have been furthered through our participation in developing and supporting the INTELSAT system. INTELSAT's manifest success has:

- Provided a dramatic example of U.S. leadership in the peaceful use of space in the interest of all countries;
- Contributed to meeting evolving U.S. commercial needs for efficient international communications services;
- Provided developing countries with improved communications at reasonable and affordable rates;
- Confined the Soviet INTERSPUTNIK system to a relatively small portion of the world;

- Supplied developing countries with access to the geostationary orbit and satellite radio frequencies; and,
- Provided benefits to U.S. companies through open international procurement for the international system's space communications equipment and services.

Permitting U.S. international satellite systems separate from INTELSAT, however, could:

- Bring new diversity and flexibility to international communications;
- Create or expand markets in new areas, such as customized, data, and video services;
- Provide incentives for INTELSAT and its Signatories to be more efficient and innovative; and,
- Permit outside financial sources to undertake high-risk, speculative ventures, thereby enabling INTELSAT to concentrate its resources on further extending basic services through prudent financial management.

To attain the optimal combination of benefits from both INTELSAT and additional U.S. international satellite systems, the United States must develop procedures and conditions under which procompetitive domestic goals can be made compatible with foreign policy objectives which have been well served by INTELSAT.

Background of INTELSAT

The United States played a leading role in the creation of INTELSAT in order to further national political, economic, and security objectives. The decision to speed development of communications satellites was first made by President Eisenhower and became a centerpiece of overall U.S. space and foreign policy programs. Five weeks after the Soviet Union launched the first man into orbit, President Kennedy sent his "man-to-the-moon" message to Congress (May 25, 1961). As part of an expanded U.S. space program, he called for accelerated development of satellites for worldwide communications.

Explaining to Congress the need for an international communications satellite system, Department of State officials in July 1961 emphasized:

- The global concept. The system should cover not only developed but also developing countries and service both small-volume as well as large-volume users, thus linking the United States to as many other nations as possible.

- o Political benefits. The system should provide an opportunity for cooperation with as many other countries as possible in the peaceful use of space, thereby forging mutually beneficial ties.

- o Trade benefits. The system should facilitate transaction of the world's business and ensure more open markets for U.S. technology and other products.

- o Conservation of the frequency spectrum. The system should conserve rather than consume, frequencies and thus help all nations, working through the International Telecommunication Union (ITU), make more effective use of the limited frequency spectrum.

- o National security. Space communications should link U.S. forces and those of U.S. allies, and help in UN peacekeeping efforts.

These objectives were incorporated in the 1962 Satellite Act which declared in its Preamble that:

> (I)t is the policy of the United States to establish, in conjunction and in cooperation with other countries as expeditiously as practicable, a commercial communications satellite system, as part of an improved global communications network, which will be responsive to public needs and national objectives, which will serve the communications needs of the United States and other countries, and which will contribute to world peace and understanding. The new and expanded telecommunications services are to be made available as promptly as possible and are to be extended to provide global coverage at the earliest practicable date. In effectuating this program, care and attention will be directed toward providing such services to economically less developed countries and areas as well as those more highly developed, toward efficient and economical use of the electromagnetic frequency spectrum, and toward the reflection of the benefits of this new technology in both quality of services and charges for such services.

47 U.S.C. 701(a)-(b).

The concept of a global system was fundamental to meeting these policy goals. Technology transfer, aerospace product sales, and satellite launch policies evolved in keeping with the global system concept.

The United States has continued to reaffirm its strong commitment to INTELSAT over the years. Under Secretary of State James L. Buckley, after consulting with other parts of the Executive branch, wrote to the FCC on July 23, 1981, regarding transborder satellite services and reaffirmed the importance to the United States of the integrity of the INTELSAT system, stating:

> The foundation of our international communications satellite policy includes the concept of a global system to which all nations can have nondiscriminatory access, and through which international communications can flow free of artificial constraints.

At the same time, Mr. Buckley recognized that exceptional circumstances might warrant the use of domestic satellites for international service. The FCC was informed that there were no foreign policy objections to U.S. domestic space systems being allowed to provide transborder service to Canada, Mexico, or the Caribbean, provided there was consultation with INTELSAT under Article XIV and appropriate foreign government approval was obtained. Services could also be inaugurated if proposals are "supported by the U.S. Government and both the United States and the foreign governmental authorities concerned, in the absence of a favorable recommendation by the Assembly, consider in good faith that the obligations under Article XIV have been met."

Service to Developing Countries

A primary foreign policy dimension of INTELSAT is service to developing countries. INTELSAT is a cooperative whose members make capital contributions commensurate with their use of the system. Members receive a return on capital (currently about 16 percent) and pay charges which reflect the variable costs of providing them service, together with an allocation of joint and common overhead costs. From the outset, INTELSAT has charged uniform rates for identical services provided on a global basis, although traffic in the Atlantic Ocean area reportedly is some six times that of the Pacific Ocean area and three times that of the Indian Ocean area.

There is volume efficiency in the use of communications satellites that has not been fully reflected in INTELSAT's rates. Such pricing policies further interests of the United States and other developed countries, as well as the interests of developing nations, because they promote the objective of linking as many countries as possible to the global system.

Although INTELSAT continues to introduce advanced equipment, it maintains less sophisticated technologies in service as well, to meet the needs of its less developed members. INTELSAT strikes a balance in all of the frequency ranges and provides for automatic and semi-automatic signaling and switching apparatus. How

well INTELSAT can maintain and expand its ability to provide basic services, including the introduction of thin-route services such as VISTA and INTELNET, while, at the same time, attempting to meet all the demands of new specialized markets and services, is another consideration in examining the best ways to fulfill the intent of the INTELSAT Agreement.

Concerns were expressed by some administrations from developing countries at the April 1983 meeting of INTELSAT Signatories in Bangkok and again at the October 1983 meeting of the Assembly of Parties in Washington that if significant traffic were diverted from INTELSAT's Atlantic Ocean region to non-INTELSAT satellite systems, a worldwide rate increase might ensue. The avoidance of significant economic harm to the global system of INTELSAT by the conditions placed on non-INTELSAT U.S. satellite systems should allay those concerns.

Statements made by developing country representatives at the October 1983 meeting reflected their interpretation of the term "single global system" used in the INTELSAT Agreement. Some maintained this term precludes the establishment of virtually any satellite system outside INTELSAT and, indeed, would preclude even the existing "regional" satellite systems. The Preamble of the INTELSAT Agreement, however, itself envisioned "a single global ... system as part of an improved global telecommunications network" (emphasis supplied) and the Article XIV mechanism expressly contemplates non-INTELSAT satellites. Non-INTELSAT satellite systems today provide international public telecommunications services after appropriate consultation with INTELSAT. It has been suggested by some administrations that the development of additional satellite systems apart from INTELSAT on the part of the United States would contravene the INTELSAT Agreement and therefore constitute a signal that the United States no longer supports INTELSAT. This is clearly not the case.

Access to the Geostationary Orbit

How all nations can enjoy "equitable access" to the geostationary satellite orbit and to the associated radio spectrum is a major concern within the International Telecommunication Union (ITU). The results of the ITU's consideration of this issue at the upcoming World Administrative Radio Conference on the Use of the Geostationary Satellite Orbit and the Planning of the Space Services Utilizing It (Space WARC) in August 1985 and June 1988 is important to the

United States and many other countries. INTELSAT's role in meeting developing countries' communications needs could make it a critical, if indirect, participant in the resolution of this issue on terms acceptable to ITU member nations.

For more than a decade, some developing countries have sought a guaranteed share of the geostationary orbit and the radio spectrum allocated to space services. They maintain that unconstrained growth of commercial satellite communications systems could exhaust the geostationary orbit and the frequencies currently available. Fearful of losing their share of what they understand to be limited global resources, developing countries in 1973 inscribed "equitable access" provisions into the ITU Convention. By the 1979 WARC, they were determined to write new rules for the use of the geostationary orbit and associated radio spectrum and obtained a commitment for the two-part Space WARC in the 1980s.

The availability of INTELSAT has not eliminated developing country demands for equitable access to the geostationary orbit and related spectrum. Nevertheless, its existence offers an alternative to the implementation of costly national satellite systems. So long as low-cost and technically attractive service is available through an international organization which accommodates the sovereignty interests of each country, there is added hope that developing countries may meet some of their needs through INTELSAT.

The proliferation of communications satellite systems already in progress, moreover, will heighten the importance of INTELSAT's role in frequency conservation. Increasing demand for the radio spectrum is hastening the development and implementation of innovative technologies which expand the capacity of the geostationary orbit resource and permit greater efficiency through multiple uses of the same frequency. Large-scale space platforms and other techniques have the potential to increase frequency usage efficiency by perhaps 50- to 100-fold; INTELSAT's multinational consolidation of demand -- domestic, regional, and transoceanic -- will thus have particular attraction. With these considerations in mind, the United States lent strong support at the October 1982 INTELSAT Assembly of Parties to the principle of domestic service using INTELSAT facilities, despite European opposition.

An indication of the developing countries' growing stake in INTELSAT can be found in INTELSAT's evolution toward playing a larger role in the provision of domestic satellite service. In 1974, Algeria proposed to lease INTELSAT capacity for enhancement of its domestic telecommunications network. Today, some 26 countries use INTELSAT to provide domestic service. INTELSAT has responded to this demand by committing itself to include planned domestic capacity, as opposed to relying solely on preemptible, spare capacity, in future generations of satellites. It has also developed higher power satellites that are compatible with the small earth stations that have proved most economical for domestic service.

INTERSPUTNIK

The Soviet Union uses satellite communications to help cement its relations with client states and to extend its influence with nonaligned nations. INTERSPUTNIK serves a number of Soviet policy goals, including Soviet interest in a "new world information order." The success of INTELSAT in providing quality service at decreasing rates to developing countries has preempted the USSR from extending its technically inferior rival service, INTERSPUTNIK, to more than a few noncommunist nations. Since it began operations, INTERSPUTNIK has obtained only five new members (Vietnam, Afghanistan, Laos, South Yemen, and Syria) beyond its original nine charter members (Bulgaria, Cuba, East Germany, Poland, Romania, Mongolia, Czechoslovakia, Hungary, and the USSR). Other countries using the INTERSPUTNIK system include Algeria, Libya, and Nicaragua.

Some suggest that potential competition with INTELSAT will lend impetus to the development of INTERSPUTNIK and increase Soviet influence in international satellite communications. 31/ Soviet development of INTERSPUTNIK, as well as the emergence of the Soviet Union as a competitor in the world market for satellite launch services, however, is likely to go forward unaffected by U.S. decisions to authorize additional U.S. international satellite systems. A substantial weakening of INTELSAT as the dominant global satellite communications system, nevertheless, could potentially enhance Soviet efforts to penetrate developing

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31/ See, e.g., Statement of Mr. Joseph Charyk, Chairman, Comsat Corporation, before the Senate Foreign Relations Committee, 98th Cong., 1st Sess. (Oct. 31, 1983) at p. 8.

countries through Soviet communication satellite facilities. An INTELSAT less attentive to developing country needs could encourage INTERSPUTNIK's efforts to expand its service area. This will continue to be an area of concern under any circumstances.

Satellite Proliferation

In addition to INTERSPUTNIK, other systems outside INTELSAT have evolved, as earlier indicated. In 1978, for example, governments (including the United States and the Soviet Union) founded the International Maritime Satellite Organization (INMARSAT) to provide service to ships at sea. A number of regional and domestic satellite systems have also developed, after consultation took place with INTELSAT under Article XIV(d) of the INTELSAT Agreement.

In the future, INTELSAT is likely to face additional satellite competition. There are a number of existing and planned satellite systems in addition to any U.S.-based systems which may be authorized. These include:

- UNISAT. Britain's first satellite system could provide both domestic television transmission and certain international communications services. After its scheduled launch in 1986, UNISAT's beam or "footprint" will cover the U.S. eastern seaboard as well as most of Western Europe.

- TELECOM. The first TELECOM satellite, the French counterpart to UNISAT, was launched in 1984. The system not only will serve domestic French needs but also will cover most of Europe and provide telephone and television connections to the French overseas departments. Its capacity will extend to the French Caribbean, eastern Canada (St. Pierre and Miquelon), and the Indian Ocean (Reunion and Mayotte).

- EUTELSAT. This Paris-based consortium of 20 participating European countries launched its first communications satellite in 1983. The system will provide telephone, television program distribution, and data transmission services within Western Europe, North Africa, and the Middle East countries bordering on the Mediterranean Basin.

- Arabsat. The Arab Satellite Communications Organization, based in Riyadh, will serve 22 Arab countries. The first of its two satellites will be launched in 1985. The system is designed to supply telephone, television distribution, and data transmission services to most of the Middle East and North Africa.

- Palapa. Indonesia's Palapa System currently provides both domestic service as well as service with the Philippines, Malaysia, and other Southeast Asia nations.

- Pacific Basin Proposal. At the Pacific Telecommunication Conference in January 1983, the Japanese Research Institute of Telecommunications and Economics (RITE) presented a detailed plan for a Pacific Regional Satellite Communications System, ostensibly designed to "supplement" the existing INTELSAT network. It would provide two dissimilar services: high-speed digital communications for data and video transmission between major cities from the U.S. west coast to Japan, Australia, and Southeast Asia; and low-volume telephone communication between rural areas, remote islands, and their capital cities.

U.S. Role in INTELSAT

The U.S. role in INTELSAT continues to be strong, although it has changed over the past 20 years. The U.S. investment share has decreased from 61 to 23 percent; hence the U.S. weighted vote in the Board of Governors has decreased to the current 23 percent. An international secretariat of some 600 INTELSAT staff now manages the system rather than Comsat. A U.S. citizen was recently elected Director General of INTELSAT. INTELSAT no longer purchases almost all of its equipment from U.S. manufacturers, although the United States still supplies about 70 percent of INTELSAT's purchases. The United States is the host country for the INTELSAT headquarters.

The United States has been and should continue to be a strong leader and contributor to the INTELSAT system. Changing technology, competitive economics, and diversifying user needs, however, have created a new international telecommunications environment. There is a manifest trend toward coexistent, separate national and regional satellite systems. This does not obviate the continued need for a global system providing an essential core for public-switched international communications. The 1962 Satellite Act and the INTELSAT Agreement both specifically anticipated communications satellite systems outside INTELSAT, and provided the flexibility to allow for and to respond to such systems.

INTELSAT serves the world well. It has established and currently operates an efficient global communications system; promotes closer ties among noncommunist countries; facilitates international business expansion; helps to develop markets for U.S. industry; prevents the spread of a global communications satellite network controlled by the Soviet Union; and is an effective international organization reflecting shared technical and political interests. At the same time, new satellite systems can supply services inconceivable 20 years ago and provide services sought by high-volume users, including the U.S. Government. New approaches promise diversity and flexibility.

INTELSAT faces growing competition from new fiber optic cables, which may constitute a more significant challenge to it than separate satellite systems. The transatlantic cable (TAT-8) planned for 1988 by AT&T and the IRCs, Teleglobe Canada, and European telecommunications administrations will have a capacity equivalent to about 38,000 telephone circuits, as previously noted, and nearly quadruple the current submarine cable capacity across the North Atlantic. This fiber optic cable, moreover, will have technical capabilities, including the ability to transmit high-quality video signals, which existing submarine cables lack.

A "status quo approach" often has short-term appeal and merit from a foreign policy standpoint. Change inherently creates pockets of concern in the complex environment of international relations. By its very nature, however, telecommunications is uniquely amenable to change. The issues associated with international telecommunications cannot and will not stand still. They are driven by technology -- and technology, in turn, is driven by continuing innovation and evolution.

U.S. policy leaders 20 years ago could not easily have envisioned the exponential expansion of communications horizons through new technology which has subsequently occurred. They did, however, anticipate the need for flexibility to develop the then-uncharted telecommunications frontier.

Unlimited proliferation of communications satellite systems separate from INTELSAT has the obvious potential to inflict significant economic harm on the global system. At the same time, U.S. economic goals require recognition of the changing marketplace and encouragement of innovation. The approach discussed in this report and reflected in the President's determination strikes a sound balance in this regard.

INTELSAT as a Competitor

An essential ingredient for the formation of INTELSAT was the provision on universal pricing for each defined service that is contained in Article V(d) of the INTELSAT Agreement. The Board of Governors, under the guidance of the Meeting of Signatories, establishes rates for each specific service or group of services which are then applied on a nondiscriminatory basis. The Signatories have established

the principle that rates shall, as far as practicable, reflect costs. This built-in flexibility within the INTELSAT Agreement permits INTELSAT to offer new services, to take advantage of new technologies, and to price new services as close as practicable to cost (including direct as well as indirect costs).

This flexibility lessens some of the concerns which arose domestically when long-distance competition was sanctioned, but incumbent carriers were not afforded the ability to price responsively. 32/ INTELSAT's ability to match the prices of other international satellite systems, however, is limited as it deals through its Signatories. As indicated above, INTELSAT's charges constitute only part of the end-user price for service. 33/ Significant changes in end-user prices are thus dependent on action by its Signatories (or, in the United States, by Comsat and terrestrial carriers such as AT&T).

INTELSAT, in any event, should enjoy some competitive advantages with respect to new satellite systems offering customized services. The INTELSAT system may embody economies of scale and scope; INTELSAT enjoys a breadth of coverage today that new satellite systems could not easily replicate. The technology currently used by INTELSAT may not permit the organization to provide efficiently all of the

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32/ See Aeronautical Radio, Inc. v. FCC, 642 F.2d 1221, 1228-29 (D.C. Cir. 1980); cf. National Assoc. of Greeting Card Publishers v. U.S. Postal Service, 569 F.2d 570, 582 (D.C. Cir. 1976) rev'd in part, 434 U.S. 864 (1977).

33/ Some indication of the costs associated with current arrangements is afforded by considering the minimum cost of a one-hour video transmission from Rockefeller Center, New York, to the British Broadcasting Corporation facilities in London. At present, the minimum cost for such service would be $2,727 per hour. On the U.S. side, AT&T's charges for domestic transmission (New York to Andover, Maine) would be about $439. Comsat's minimum charge would be about $633 (of which $480 goes to INTELSAT), yielding a total U.S. cost of about $1,072 per hour. British Telecom would then charge 4,200 gold francs for the British side of the circuit (which charge would include landline charges) or about $1,655 per hour (of which INTELSAT would get another $480). Thus, of this total charge of $2,727, INTELSAT would receive $960, or about 35 percent. The figures, it should be noted, do not necessarily reflect INTELSAT's payments to owners. Satellite charges were computed using Comsat's "Satellite Television International Tariff Information Handbook" (Aug. 1, 1982, as revised) at pp. 140, 142. Domestic AT&T tariff prices were supplied by AT&T.

customized services some of the new entrants envision. INTELSAT may also, as a matter of prudent management, choose not to seek to offer all such services. New satellite entry subject to the conditions discussed in this report, however, does not pose any substantial risk of significant economic harm to the INTELSAT global system.

IV. RECOMMENDED APPROACH TO NEW SYSTEM PROPOSALS

The primary focus of this report is on those factors underpinning the President's November 1984 determination that new U.S. entry into the international satellite business is "required in the national interest," provided entrants are not interconnected with public-switched message networks and joint consultation with INTELSAT is undertaken. The Presidential determination does not constitute endorsement of any specific pending satellite application. It represents, rather, a determination of the terms and conditions under which entry will be in the national interest. Reducing barriers to entry and permitting entrepreneurs to go forward is an important step toward achieving an efficient market for customized services. Other policy components to this process would also facilitate efficiency and can be pursued in parallel proceedings. In this section, the Presidential determination and those "parallel track" matters are discussed in detail.

New Systems Should Be Permitted

First, additional U.S. international satellite systems should be permitted, but subject to the terms and conditions previously specified. New service alternatives are proposed in the pending applications that would be in the national interest. These include certain international video and data transmission services not now available through the INTELSAT system. The proposed systems also may offer major users a means of enjoying more of the savings associated with service on high-traffic volume communications routes than those customers have today.

Users, and particularly sophisticated business service customers, stand to benefit from satellite communications options which are more closely tailored to their special needs. INTELSAT has concentrated on its primary function -- serving public-switched service users. The present INTELSAT system, moreover, is not configured to provide every important customized business service efficiently. Requiring business users with special needs to conform to "lowest common

denominator" communications offerings impose economic costs which can and should be lessened.

Service Limitations Required

Service limitations are required, however, to avoid significant economic harm to INTELSAT. New entrants thus should be limited to the provision of customized service. Such services involve the sale or long-term lease of transponders or space segment capacity for communications that are not interconnected with public-switched message networks. Customized services include intracorporate networks and television transmission. Emergency restoration services would also constitute a customized service. 34/ Prospective new satellite entrants maintain they will target communications needs that are not now efficiently served by INTELSAT. They should thus be authorized under regulatory terms and conditions that will hold them to their commitments and ensure that their attention is focused on serving and developing the customized service market.

At present, public-switched message traffic comprises the overwhelming majority of INTELSAT traffic. As indicated above, the most recently published INTELSAT annual report states that full-time voice, record, and data service accounts for about 86 percent of the total satellite utilization revenue INTELSAT receives. Such public-switched traffic constitutes the commercial core of the INTELSAT operation and, again as indicated above, it is forecast to increase by 15 percent over the 1988-2000 time period. 35/ Technical advances including IDCD, as well as additional entry into the international telephone business by U.S. carriers such as MCI and GTE Sprint, should have a positive effect on public-switched traffic. Increasing service and price competition among AT&T and other U.S. carriers, moreover, are likely to stimulate overall demand. There is evidence suggesting such competition in domestic public-switched service markets stimulated

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34/ Recommendation D.1 of the International Consultative Telegraph and Telephone Committee (CCITT) places certain limitations on customer use of international private leased circuits. FCC regulations do not now permit the resale or sharing of international private line services.

35/ 1983 INTELSAT Ann. Rep. at p. 17; 1985 U.S. Industrial Outlook at p. 31-7. See n. 11, supra.

demand. 36/ There are also indications that this demand-stimulation effect may already be operating in some international public-switched service markets. 37/

Limiting new entrants to customised services reduces any likelihood of significant adverse economic impact on INTELSAT. Such restrictions are sustainable domestically and internationally, particularly given the multinational character of international telecommunications and the fact that foreign PTTs police the services provided by companies serving their countries. No regulatory regime can be "air-tight." But the limitations discussed here are adequate to safeguard the economic integrity of INTELSAT, especially given public-switched market trends as discussed in the subsequent section on the sustainability of such restrictions.

36/ Between 1978 and 1979, for example, U.S. domestic telephone revenues increased by 6 percent. In 1978, the remaining restrictions on competition among domestic carriers were removed. Between 1979 and 1980, the first full year of generally unrestricted public-switched message competition, the annual rate of increase rose a full percentage point, to about 7 percent (using constant 1972 dollars). Between 1980 and 1981, the annual rate of increase rose to about 10.5 percent, or about 40 percent higher than the rate which prevailed when the domestic public-switched services market was far less competitive. See 1978 through 1983 U.S. Industrial Outlooks.

37/ As one international communications expert has stated:

> As you may know, we've had some competition on service to Canada, and that same competitor (MCI) has set up an experiment with Australia. It's very early to be drawing direct conclusions, but I'd like to share some figures with you. We had forecast ten percent growth this year in our messages to Canada. Our actual growth in the first seven months of the year was sixteen percent -- six percentage points higher than we predicted. Now, these results are subject to interpretation. They can be attributed to such things as marketing efforts, advertising, and, of course, the recovery of our economy. And, as I said, it is still very early. But it certainly appears to me that, from what we've seen so far at least, competition has not hurt growth. And perhaps, as more time elapses, we will be able to say it has stimulated business. It makes one wonder, if we had competition in other countries, whether perhaps the total communications package would grow at an accelerated rate.
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> Remarks of Mr. R.B. Nichols, AT&T, at TELEVENT '83, Montreux, Switzerland, Oct. 25, 1983 at p. 17.

Cost-based Access An Important Issue

The economic well-being of INTELSAT may be furthered by "cost-based" access for customized services. One way this could be secured is by permitting U.S. carriers and users to deal directly with INTELSAT, with the U.S. Signatory (Comsat) serving as their ministerial agent. Another way could be to ensure that all of the costs which Comsat and the carriers assess in addition to the basic INTELSAT charge reflect legitimate, necessary costs.

The process by which customers obtain international satellite communications service results in end-user prices substantially above INTELSAT circuit charges. The current U.S. arrangement where Comsat, in effect, functions as exclusive U.S. marketing agent for INTELSAT circuits, may be ill-suited to an era of proliferating customer demands. No single entity, no matter how perceptive, can reasonably be expected to anticipate and satisfy all customer demands and needs in a market which is experiencing rapid demand-inducing and cost-reducing technological advances. Permitting expanded, direct, cost-based access to INTELSAT may be the most reliable means of substantially reducing costs and ensuring valid entry signals.

Recently, the FCC required Comsat to unbundle its INTELSAT tariff into separate, "cost based" rates for space segment and earth segment services. 38/ In addition, the FCC determined that AT&T and the IBCs could own earth stations independent of the traditional joint ownership arrangement, subject to FCC approval on a case-by-case basis. This decision seeks to stimulate competition to provide earth station services, and to lower costs and increase the availability of services to the consumer. The decision may also allow the FCC further to identify legitimate cost components of Comsat's space segment rate.

The Executive branch shares the FCC's goals of providing users with cost-based international satellite communications services of high quality and reliability, tailored to individual needs. The FCC recently declined to commence a formal

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38/ Earth Station Ownership (CC Dkt. 82-540), FCC Mimeo 84-605 (released Dec. 18, 1984).

rulemaking with a view toward sanctioning expanded, cost-based access to INTELSAT. It expressed the view that regulatory measures could lessen the need for such structural change for end-users and Comsat's carrier customers, but emphasized that it was not foreclosing reconsideration of direct access should alternative measures prove ineffective. 39/

The Executive branch nevertheless recommends that the FCC examine cost-based carrier and user access to INTELSAT with respect to customized services, and the Department of Commerce will soon file detailed recommendations in this regard. While this issue might entail substantial public benefits when viewed in parallel with the establishment of alternative satellite systems, it is not a prerequisite for, nor should it be the basis for any delay in, ruling on the applications now before the FCC.

In sum, the President has determined that entry by additional international satellite systems, limited to customized services, is required in the national interest because it will:

-- Provide users more flexible options and facilitate more efficient international satellite communications services;

-- Promote development and use of satellite technology; and,

-- Afford U.S. entrepreneurs an opportunity to develop new communications services and increase international trade opportunities.

V. AN EVOLUTIONARY APPROACH

The concept of additional entry into the international satellite communications business is not new. The United States, as earlier discussed, has permitted such entry by sanctioning transborder satellite communications, after consultation with INTELSAT, and has supported establishment of a number of regional satellite systems. The approach recommended here should thus be regarded as facilitating evolutionary, not revolutionary, change in international telecommunications.

39/ Regulatory Policies Concerning Direct Access to INTELSAT (CC Dkt 82-548), 97 FCC 2d 296 (1984).

Objections have been voiced to any changes in the status quo. Some suggest, for example, that there would be a severe adverse economic impact on INTELSAT from new systems, even if the scope of their offerings were limited, or that any limitations would prove unenforceable or ineffective over time. Similarly, it has been suggested there are certain international radio frequency management obstacles. Finally, it has been asserted that U.S. international trade or other interests, or the legitimate interests of less developed countries, could be adversely affected. None of these objections withstand close analysis, however, nor do they override the advantages of additional entry to the national interest.

No Adverse Economic Effects Are Likely

Under the recommendations and criteria discussed in this report and in the President's determination, new satellite entrants could not offer public-switched services directly or indirectly and would be obliged to focus on developing customized service markets. Since public-switched services comprise by far the largest part of international traffic, any significant adverse impact on INTELSAT could result only if: (i) customized communications quickly supplant conventional services as the mainstay of the international communications business; (ii) such new services constitute a uniquely profitable line of commerce, the profits from which are essential to subsidize other necessary but unprofitable INTELSAT undertakings; and (iii) INTELSAT proves unable effectively to match new entrants, by, among other things, achieving end-user price reductions, broadening its service repertoire, and providing carriers and users direct access options. Virtually all of the Executive branch's analysis, however, indicates that these possibilities are remote.

According to INTELSAT forecasts (see Table I), in 1988 traffic on its trans-atlantic voice-grade circuits will continue to be composed overwhelmingly of message telephone service (MTS) and related public-switched services. Specifically, of 15,603 satellite voice-grade circuits to 18 major European countries planned in 1988, INTELSAT has forecast 14,000 will be used for MTS alone. Under the Executive branch approach, new entrants would thus be barred from providing services which are directly competitive with some 90 percent of INTELSAT's voice-grade offerings, according to INTELSAT's own estimates.

Table I

1988 INTELSAT TRAFFIC PROJECTIONS

INTELSAT has forecast the following breakdown of its 1988 voice-grade traffic to 18 major European countries:

14,185	MTS
113	Record Service
1,259	Alternate Voice Data (AVD)
46	Data
15,603	Total voice-grade (4 kHz) circuits

INTELSAT has also projected for 1988 the following numbers of channels for its International Business Service (IBS):

18	1,544 megabit per second (MBS) channels-K band
182	56/64 kilobit per second (KBS) channels-K band

For 1988, INTELSAT forecasts seven television transponder leases to Europe.

Source: INTELSAT Global Forecast (June 1982).

The impact of new entry on markets for other than public-switched services will depend on growth in demand for those customized services and users' evaluation of the relative merits of the rate and service options offered by the entrants and the incumbent, INTELSAT. Because of the dynamics of the international communications marketplace, uncertainties regarding user needs and preferences, and imperfect knowledge of the likely pricing strategies of entrants and INTELSAT alike, any forecast of market capture by the new entrants and possible revenue loss by INTELSAT, is subject to risk of wide error. Review of several market penetration and growth scenarios, however, indicates that substantial economic harm to INTELSAT from new entrants limited to private non-switched services is highly improbable. Any traffic diversion and loss of business revenue from INTELSAT to the entrants will almost certainly prove less than the expected growth in revenues from users of INTELSAT services. The total annual revenues most likely to be obtained by the proposed entrants, moreover, will not have significant adverse effects on INTELSAT or its rates for switched services. 40/

40/ See generally "Technical, Economic, and Institutional Feasibility of Customer Premises Earth Stations for INTELSAT Services," (NTIA: M/A-Com. DCC, Inc., May 1983); "Present and Projected Business Utilization of International Telecommunications" (NTIA, 1981).

Some further contend that new satellite system entry will result in widespread and substantial de-averaging of INTELSAT's prices, with the further consequence that "thin-route" prices will rise abruptly while "thick-route" prices rapidly fall. This, critics maintain, will result in sharp increases in communications costs for developing countries who today are said to benefit from internal, INTELSAT-devised and administered cross-subsidization schemes. Such pessimistic forecasts, of course, are comparable to those which were advanced when U.S. domestic competitive new entry was under consideration by the FCC.

Possible adverse effects on developing nations are of significant concern, given the increasingly important role communications plays as a catalyst for overall economic development and given the United States' longstanding commitment to improving the economic prospects of developing nations. Analysis indicates there is little possibility of significant adverse effects on INTELSAT, or, in turn, adverse effects on developing nations.

There are three reasons for this conclusion. First, by far a majority of INTELSAT's core revenues and its basic service functions would be "off-limits" to new entrants. Second, even assuming some significant cross-elasticity or interchangeability of demand between customized and conventional services, both markets currently are growing rapidly. Revenue "siphoning" is likely to occur, if at all, only when the markets at issue are static, which is not true here. INTELSAT's charges, moreover, typically constitute but part of end-user charges for communications circuits. Increases in INTELSAT's charges for public-switched offerings, which are unlikely, need not necessarily be reflected in higher end-user circuit prices. Third, INTELSAT is in a good position to compete. The organization has an extensive array of advanced spacecraft, a highly talented technical and managerial cadre, and enjoys global acceptance and presence. These are potential competitive advantages few entrants could hope to replicate.

In sum, while potential adverse effects of new entry on developing nations' communications prices is an issue, there are few foreseeable conditions, if any, under which the pessimistic forecasts advanced in opposition to new entry might conceivably materialize. In the unlikely event such problems develop, moreover, there are a number of corrective measures available other than pursuing unnecessary restrictive entry policies.

No Valid Spectrum Management Objections

Concern has been advanced that U.S. approval of additional international satellite systems could complicate international radio spectrum management programs. Such approval allegedly could be perceived as inimical to the goal of ensuring "equitable" access to and use of the geostationary orbit and associated radio spectrum, increasingly regarded as a scarce and valuable international resource, and thus compromise our efforts to ensure international acceptance of flexible orbit and spectrum regulation. These are not unreasonable concerns for study. Our review of the possible effects of such U.S. action, however, suggests little adverse impact on radio frequency management policies and programs.

The U.S. international satellite systems now being considered by the FCC propose to use current technology and to function in the frequency bands allocated internationally for such services. The proposed uses accord with applicable international radio regulations, as do the projected power flux density, "station keeping," and "pointing accuracy" features of the proposals. Engineering review of the proposed new systems indicates they would comply with pertinent international radio regulations.

Questions have been raised regarding the possible effect of U.S. approval of additional satellite systems on current and future international discussions of geostationary orbit use, previously discussed in the part of this report surveying foreign policy concerns. The orbital positions proposed by the new entrants will require technical coordination under the ITU Radio Regulations, and the systems must eventually be recorded by the International Frequency Registration Board. A preliminary review indicates all of the proposed positions can be accommodated through the current ITU process.

Since the advent of commercial satellite communications, there has been disagreement internationally between those favoring a flexible international regulatory approach, and those urging rigid, "a priori planning" of orbital resource use. The United States and other nations have favored a flexible approach to facilitate the evolution of satellite communications technology. Some foreign administrations, however, have pressed for a more rigid approach on the ground it

will ensure "equitable access" to the geostationary orbit, especially on the part of developing countries. 41/

International discussions regarding orbital "slot" utilization antedate current proposals to deploy additional U.S. international satellite systems. These discussions will be an important part of future Space WARCs regardless of the disposition of the pending U.S. satellite system applications. Granting these applications could provide those favoring a rigid approach some additional support for their views; they may contend that the United States is using more than its "fair share" of what is perceived to be a scarce international resource. Such arguments, however, are not compelling.

The orbital positions sought by applicants for new U.S. satellite systems are unlikely to interfere with the rights of other nations to make use of orbital resources. Additionally, experience gained through such new systems would be available to other administrations and thus afford them a means of better serving their own national communications needs. Several of the U.S. satellite system applicants, moreover, propose the sale or long-term lease of space segment capacity which could afford both U.S. and foreign users an opportunity to invest directly in, and secure the benefits of, advanced satellite communications. Under the Executive branch approach, both U.S. and foreign customers would be offered new, potentially valuable, service options.

The United States, by taking a flexible approach toward orbit use, has managed to foster the development of new communications techniques which, in turn, have made possible steadily more intensive use of the orbital arc. Spacing between U.S. domestic satellites has been steadily reduced from 5 degrees to 2 degrees over the past decade, and advances in technology should aid in achieving even more intensive use. Such gains in technical sophistication and effectiveness would not have been accomplished as readily, if at all, had the United States adopted the rigid approach some nations urge.

41/ See Robinson, Regulating International Airwaves: The 1979 WARC, 21 Va. J. of Int'l L. 1, 44 (1981).

These concerns on the part of some nations are being noted by policymakers in preparing for the 1985-88 Space WARC and international radio conferences generally. The restrained approach toward additional international satellite systems reflected in this report and in the President's determination, however, should ameliorate international concerns. It is possible to accommodate the interests of INTELSAT, new entrants, and, more importantly, the users of international communications both here and abroad, and thus to maximize the benefits afforded by space satellite technology.

Positive International Trade Effects.

Related contentions have been advanced concerning U.S. approval of additional international communications satellite systems. It has been contended, first, that U.S. approval will dissipate U.S. influence over INTELSAT and, second, diminish the significance of INTELSAT as a major purchaser of U.S. aerospace products. Third, it has been contended that U.S. action will trigger a further proliferation of regional and transoceanic satellite systems sponsored by other nations which will rely chiefly on indigenous aerospace firms, thus gradually eroding any technological and commercial edge the United States enjoys in the aerospace field. Finally, some maintain that communications administrations abroad will seek to influence procurement decisions made by new U.S. satellite system entrants.

INTELSAT scheduled 12 INTELSAT V and V-A satellite launchings between 1982 and 1985. The total number of satellites in the current expansion program is 15, with an estimated value of $1.3 billion (including launch costs). In March 1982, INTELSAT awarded Hughes Aircraft Company a $700 million contract for the purchase of the first five satellites of the next generation, INTELSAT VI. Each INTELSAT VI satellite will have the capability to handle more than 30,000 telephone circuits and several television programs -- more than twice the capacity of the latest INTELSAT V-A satellite --and a ten-year design life. INTELSAT will launch the first satellite in this series in 1986 aboard the U.S. Space Transportation System (Shuttle) and may use the European Space Agency's Ariane system for others. INTELSAT estimates the cost of this latest development program will reach $2.2 billion by 1992. U.S. aerospace firms anticipate participating in this program, and the Executive branch has no ground to assume this will not be the case.

It is not U.S. influence that currently affords U.S. aerospace producers a significant share of INTELSAT's procurement. The success U.S. producers enjoy is due chiefly to the superior quality of their products, the attractiveness of their prices, and the sophistication of their technology in what is increasingly a fiercely competitive world market. The INTELSAT Definitive Agreement, moreover, specifically mandates open and competitive procurement. It is unfair to imply the skilled professionals who comprise the INTELSAT Executive Organ would disregard the requirements for competitive bidding contained in the Agreement, overlook products offered by U.S. firms at competitive prices, and thus compromise a well-earned reputation for fair and business-like conduct of this important international enterprise.

At present, U.S. aerospace producers confront intensifying international competition from a diversity of high-caliber, multinational firms, and this trend is likely to continue independent of the decisions at issue here. U.S. firms enjoy some advantages in producing certain classes of spacecraft — large capacity spin-stabilized satellites, for instance. While U.S. firms are preeminent in the international aerospace field, fewer and fewer free world aerospace projects rely exclusively on products supplied only by one nation's firms. Extensive joint venture and cross-licensing arrangements are increasingly characteristic of this field.

INTELSAT has purchased from a broad range of suppliers, and the percentage of its procurement awarded U.S. firms has declined as the commercial competence of non-U.S. firms has grown. The United States, however, should not fear this increased competition. In a free trade environment, such competition provides a necessary and highly desirable spur to greater efficiency, more rapid innovation, and improved customer responsiveness. Indeed, much of the rapid growth in the U.S. aerospace business is attributable to the competitiveness of this field generally and the resulting incentives to perform efficiently.

The intrinsic talents and abilities of U.S. aerospace firms should not be adversely affected by U.S. approval of additional international satellite systems. INTELSAT's professionals will continue to abide by the competitive procurement requirements contained in the Definitive Agreement. The importance of INTELSAT as a purchaser of aerospace products, both of U.S. and foreign manufacture, in sum, should not be impaired.

The Executive branch has also seriously considered contentions that U.S. approval of new satellite systems could have a "domino effect" and trigger additional entry by "state-subsidized" European and other systems that will adversely affect INTELSAT and not make use of U.S. aerospace products. While the details of all such additional satellite systems are not yet available, a number of satellite systems are now functioning or planned worldwide in addition to U.S. systems as earlier discussed. Extensive submarine cable facilities, moreover, are also under construction.

Available information does not indicate U.S. aerospace firms have been foreclosed from competing to supply existing and planned regional satellite systems. Ford Aerospace, for example, reportedly is a major subcontractor for both Arabsat and French satellite systems. Hughes Aircraft has supplied spacecraft for the Indonesian Palapa regional system and has longstanding relations with SPAR, the Canadian firm which is the prime contractor for the Brazilian domestic satellite system. Ford, Hughes, and RCA all have commercial arrangements with Japanese aerospace companies and thus stand to participate in any satellite systems which Japanese firms may propose in the Pacific region.

It is unsound to assume, moreover, that any sanctioning of new U.S.-based satellite systems will adversely affect INTELSAT since foreign entrants may not be subject to limitations such as those recommended for U.S. entrants. Having placed restrictions on the activities of U.S. entrants, the national interest would require comparable limitations on the services any foreign satellite system might provide to and from the United States. 43/

At present, the United States accounts for a majority of international telecommunications traffic and, indeed, is said to constitute some 40 percent of

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43/ Under the 1921 Cable Landing Act (47 U.S.C. 34, 35) and the delegation of Presidential authority to the FCC in Executive Order 10530 (3 CFR 189 (1954-58 comp.)), the FCC enjoys broad authority regarding the provision of international services by foreign entities directly or indirectly to the United States and has authority to take steps to ensure equality of opportunity among U.S. and non-U.S. carriers in the international telecommunications business. Section 308(c) of the Communications Act (47 U.S.C. 308(c)) empowers the FCC to place comparable requirements on those providing international services by radio.

the total world communications services and products market. 41/ Access to the U.S. market is thus commercially critical. Having taken appropriate steps to safeguard the economic integrity of INTELSAT, the United States would not sanction actions by foreign systems serving U.S. markets that would undermine our limitations and place U.S. firms at a competitive disadvantage.

Finally, the Executive branch has weighed the possibility some foreign governments might consider dictating procurement requirements in exchange for permitting non-INTELSAT satellite systems to access their markets. The United States would oppose any initiative by foreign administrations which would discriminate against U.S. aerospace firms. The United States does not wish to regulate the procurement decisions of noncommon carrier, satellite systems. The United States, nevertheless, would consider declining to consult on proposals involving unacceptable procurement provisions that could adversely affect competition in the aerospace industry. Such provisions might also raise questions under international trade agreements.

Not only is there little ground for concern that U.S. approval of limited entry into the international satellite field would adversely affect international trade, but there are also sound reasons to forecast positive consequences. International services today are priced considerably above domestic circuits of comparable length. At present, for example, MCI charges a minimum of $3,700 per month for a full-time, voice-grade private line between New York and London. A New York to Los Angeles private line circuit retails for from $1,507 (MCI), to $1,701 (Western Union) to $1,150 (RCA). International service, in short, costs between two and three times comparable U.S. domestic service. A U.S. firm offering international circuits at prices comparable to U.S. domestic prices should thus experience significant demand.

U.S. financial services and data processing companies constitute major factors in the international communications market, with annual communications bills amounting to tens of millions of dollars in several instances. Reductions in

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41/ See 1985 U.S. Industrial Outlook at p. 31-1.

these communications costs imply lower business -- and, ultimately, customer -- costs and an expansion in business activity. New entrants may also offer large users services more closely tailored to particular corporate needs. Worldwide credit card and electronic funds transfer operations, for example, may be heavily dependent on the availability of efficient, dedicated satellite communications networks. New communications service options and resulting efficiency gains should be reflected ultimately in lower costs to consumers and, in the case of U.S. firms, enhance the attractiveness of their products in international markets.

New communications satellite offerings should also have an affirmative effect on the U.S. services sector generally, which is of special importance given the contribution this sector makes to U.S. overall foreign trade. In recent years, the services sector has become a major source of export receipts in U.S. balance-of-payments accounts. Included in this diverse sector are enterprises including data processing, engineering, architectural, and construction services, advertising services, management consulting and accounting services, insurance services, and the provision of video programs, all of which are increasingly dependent on the availability of effective and efficient international communications. The market for U.S. programs is particularly important given the rapid development of cable television, commercial television, and other video services in Europe. In 1982, receipts from services exports were $40.4 billion, about one-fifth the amount of U.S. merchandise exports. Over the past decade, growth in U.S. services exports has partially offset losses in merchandise export accounts. Services constitutes a key component of U.S. international trade and expanding U.S. communications options should contribute to its growth. 44/

National Defense and Security Implications

International communications constitutes a critically important component of U.S. and allied defense and security programs. The U.S. Department of Defense is the largest single user of international communications services, spending more than $30 million annually for more than 22[illegible] commercial satellite channels.

44/ See generally 1984 U.S. Industrial Outlook at pp. 23 et seq.

Moreover, the Defense Department not only has extensive North Atlantic Basin communications requirements; it also needs to communicate globally to remote locales and has relied significantly on the INTELSAT system in this regard. The Defense Department is concerned, therefore, that additional competition in the international satellite communications business not impair the cost-effectiveness or service quality of the INTELSAT system. Approval of additional U.S. international satellite systems, subject to the limitations discussed in this report, will not adversely affect national defense.

A key interest of the Defense Department and the national security community is ensuring the effectiveness and survivability of international communications services through redundant routing and maintaining a broad mixture of international communications facilities. 45/ The Defense Department traditionally has favored the deployment of submarine cable facilities to complement satellite facilities. In addition, the Defense Department maintains extensive Government-owned facilities to provide international communications. Furthermore, current national security telecommunications policy assigns priority to the creation of a survivable telecommunications infrastructure to support the Federal Government's critical domestic and international telecommunications needs. Additional international satellite facilities would contribute to the "mix of media" national defense requires. Under the limitations proposed here, it is unlikely there would be any significant adverse effects on INTELSAT or other international communications facilities. Accordingly, overall national security telecommunications capability would benefit.

The Defense Department also has a strong interest in the continued strength and vitality of the U.S. satellite communications and aerospace industries. The Defense Department has expressed concern that the United States not become dependent on foreign-owned or controlled firms to provide necessary services and equipment. 46/ Approval of the satellite system applications now pending before

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45/ See Statement of Lieutenant General W.J. Hilsman, Director, Defense Communications Agency, Before the Senate Communications Subcommittee in Hearings on S. 3469, 97th Cong., 2d Sess. 96 (1982).

46/ Id. at 93-94.

the FCC, subject to limitations, would advance U.S. technology, and defense interests would benefit.

The Defense Department could benefit significantly from changes in FCC rules to facilitate cost-based access to INTELSAT. Access by firms other than Comsat has been authorized by the FCC in the past. 47/ Such access is a means by which international communications costs can be substantially reduced and service flexibility improved. Both would benefit the Defense Department as a major user.

In conclusion, the Defense Department and the other parts of the national defense and security community have a strong interest in the future economic strength and technological vitality of the INTELSAT system. Under the limited entry approach discussed here, those legitimate interests would be protected. Indeed, authorizing additional U.S.-owned and controlled international satellite systems could further defense interests by improving the survivability of the U.S. national telecommunications infrastructure and maintaining an effective and efficient aerospace industry.

Limitations on International Service are Sustainable

The President's national interest determination stated that certain criteria were necessary to ensure that the United States meets its international obligations and to further its telecommunications and foreign policy interests. The Secretaries of State and Commerce have informed the FCC that, in addition to INTELSAT consultation, final authorization of each system must restrict such licensee to providing services through the sale or long-term lease of transponders or space segment capacity for communications not interconnected with public-switched message networks (except for emergency restoration service).

While recognizing the public benefit of these restrictions, some industry participants have expressed concern that the FCC may not have the power to impose or maintain such limits. They point particularly to the reversal of the FCC in the

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47/ See Transiting Decision, 23 FCC 2d 9, 30 FCC 2d 513 (1971); see also ITT World Communications, Inc. v. FCC, 725 F.2d 732, 752 n. 48 (D.C. Cir. 1984).

so-called Execunet decisions. [48] Their concern is misplaced, however, for if based on proper regulatory procedures and findings, FCC limitations on international service offerings by new satellite entrants are sustainable.

Applicants to construct and operate satellite systems are subject to Title III of the Communications Act as previously noted, and many of the provisions of that title broadly empower the FCC to take the actions required here. Section 301 prohibits persons from transmitting radio signals except in accordance with the Act and with a license granted under its provisions. Section 303(b) authorizes the Commission to prescribe the nature of the service to be rendered by each class of licensed station and each station within a class.

Under section 303(f), the FCC is authorized to adopt regulations necessary to carry out the provisions of the Act. Section 303(r) specifically authorizes the FCC to prescribe such restrictions and conditions as may be necessary to carry out the Act or U.S. obligations under treaties or conventions relating to radio or wire communications.

In addition, section 308(c) provides that in granting a radio license for commercial communication between the United States and any foreign country, the FCC may impose any terms, conditions, or restrictions authorized to be imposed under section 2 of the Submarine Cable Landing Act (47 U.S.C. 35). Again this empowers the Commission to withhold, revoke, or condition a license. [49]

Section 309(h) states that each license is subject to conditions, including that the licensee does not have a right to operate the station beyond the term of the license nor in any manner other than authorized therein.

48/ MCI Telecom. Corp. v. FCC, 561 F.2d 365, 580 F.2d 590 (D.C. Cir. 1977, 1978). See generally Hutton, The Proposed Deregulation of Domestic Common Carrier Telecommunications, 69 Cal. L. Rev. 455, 457 (1981); Warren, Intercity Telecommunications Competition After Execunet, 31 Fed. Com. B.J. 117, 129 (1978).

49/ Functions vested in the President by section 35 of the Cable Landing Act were delegated to the FCC by Executive Order 10530, 3 CFR 189 (1954-1958 Comp.).

With this extensive statutory support, 50/ the courts naturally have found a delegation of wide discretion to the Commission: "(I)t is clear that Congress meant to confer 'broad authority' on the Commission . . . so as 'to maintain, through appropriate administrative control, a grip on the dynamic aspects of radio transmission.'" 51/

Despite such underpinnings, some maintain that the FCC's ability to circumscribe the range of services offered by additional international satellite systems is limited, based on their reading of the Execunet rulings. In 1976, MCI began marketing a long-distance service called "Execunet." The FCC determined that Execunet was "message telephone" service (MTS) not "private line" service, that MCI had been limited to providing only specialized or private line services, and thus ordered the offering discontinued. The basis of the FCC's opinion was that there was an implied restriction in the license limiting MCI to specialized services, because the Commission had a written policy of prohibiting specialized carriers from providing MTS service. The court remanded the FCC's decision, because it had not made a specific determination in granting MCI's license that the public interest and necessity required such a restriction. In arriving at its ruling, the court discussed the authority of the FCC to restrict licenses:

> . . . the usual way in which a carrier becomes restricted in the services it may offer is for the Commission to write restrictions into the facilities authorizations that must be obtained pursuant to Section 214 of the Communications Act before any communications line may be built, operated, or extended. Accordingly, a carrier can usually tell if it is subject to service restrictions simply by examining the instruments of authorization issued to it by the Commission. 52/

50/ Similar authority has been granted to the FCC under title II of the Act with respect to common carriage. For example, "The Commission shall have the power to issue such certificate as applied for, to refuse to issue it, or to issue it . . . for the partial exercise only of such right or privilege, and may attach to the issuance of the certificate such terms or conditions as in its judgment the public convenience and necessity may require." 47 U.S.C. 214(c).

51/ FCC v. Pottsville Broadcasting Co., 309 U.S. 134, 138 (1940), quoted in FCC v. Midwest Video Corp., 440 U.S. 689, 696 (1978).

52/ 561 F.2d at 373.

The court did not find the FCC lacked authority to prescribe the services MCI could offer, but only that when granting MCI its authorization the FCC had not followed proper procedures and made the requisite public interest finding that such service limits were appropriate. Assuming the FCC were to make proper findings in the case of each of the proposed new international satellite systems, new entrants can legally be circumscribed in the range of services they may offer. 53/ This is especially true since the President has determined that such limitations are required for foreign policy and related reasons, an area in which the courts have generally deferred. 54/

Opponents of the pending applications argue any limitations placed on new entrants ultimately might be relaxed domestically. Changed circumstances conceivably might lead to such reconsideration in the future; U.S. domestic common carrier regulations in general have tended to be liberalized over time. The same is not true abroad, however. Virtually all European PTTs currently enforce service restrictions, and there are few indications this will change. Enforcement measures include on-site monitoring of users' telecommunications centers, and use of facilities for unauthorized purposes is grounds for discontinuation of service. Most European PTTs also do not permit use of customer-premises earth stations at this time, nor the resale of communications circuits. U.S. international firms also often admonish their customers not to use facilities for impermissible services. 55/

53/ The FCC has successfully exercised similar authority a number of times, for example restricting the scope of AT&T and Comsat's participation in domestic satellite services (Domestic Communications-Satellite Facilities, 35 FCC 2d 844, 853 (1972)) and restricting the Satellite Business Systems (SBS) joint venture of IBM and Comsat (Satellite Business Systems, 61 FCC 2d 997, 1046, recon. denied, 64 FCC 2d 872, 873 (1977)).

54/ See, e.g., Dames & Moore v. Regan, 453 U.S. 654, 678 (1981); Haig v. Agee, 453 U.S. 280 (1981).

55/ One of the leading providers of international data processing services informs customers of its sophisticated "Cybernet Services," for example --

> Users of Control Data services should be aware that the rules and regulations of the United States and International Telecommunications Regulatory Agencies prohibit Control Data from using communications
> (Continued on p. 49.)

Given the multilateral nature of international telecommunications and the fact customers of the proposed new U.S. satellite systems will be obliged generally to deal through local PTTs for the foreseeable future, we believe limitations on the services offered by new systems can be effective. If there were sufficient noncompliance with the FCC's restrictions to raise the prospect of significant economic harm to INTELSAT, such noncompliance would almost certainly be obvious to competitors and regulators alike. As indicated, no regulatory regime whether here or abroad can ever achieve 100 percent effectiveness nor be immune to further evolution. The limitations proposed here, however, will prove sufficiently effective to prevent any significant adverse impact on INTELSAT. If changes in the U.S. limitations are undertaken in the future, moreover, those will be accomplished consistent with our INTELSAT obligations.

"Predatory Pricing" and Related Concerns

Some have expressed concerns over possible pricing responses to competition by INTELSAT. Price competition, however, benefits consumers. Price reductions by an established firm with market power are not always or even usually "predatory," much less socially or economically undesirable. Too rigid or unbending a pricing standard may discourage price cutting, maintain prices in a market significantly above competitive levels, and also induce entry by less efficient firms. Too flexible a standard obviously could permit a firm with substantial market power to reduce price below actual cost and thus damage or inhibit competition. Nevertheless, we believe that concerns about possible predatory pricing are

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(Continued from previous page.)

> services it leases from domestic, international and foreign communications carriers to transmit information for its users which is not part of a 'single integrated' data processing service. All information transmitted must be directly related to the data processing applications or service provided by Control Data and unprocessed information shall not be allowed through the service between user terminals, either directly or on a store and forward basis. Noncompliance with these rules and regulations may force Control Data to discontinue the users' data processing service.

Cybernet Reference Manual (cover sheet) (1980, rev.).

premature. The economic and legal literature provides very little evidence predatory pricing has ever occurred. 56/

INTELSAT's ability to engage in predatory pricing, in any event, is dependent in large part on the willingness of the U.S. Government to overlook such conduct or to fail to take remedial steps if it occurs. Any such assumption, however, is obviously flawed. If it were shown, for example, that INTELSAT was charging rates for customized offerings which it could not cost-justify and which were significantly injuring U.S. competitors, the Government would necessarily reexamine the restrictions placed on U.S. entrants pursuant to the President's national interest determination and take appropriate remedial actions.

CONCLUSION.

The applications to establish additional international satellite systems now pending before the FCC presented four options. The Executive could have recommended (1) approval, (2) denial of the applications outright, (3) approval of the applications subject to specific qualifications, or (4) further study, with postponement of any decision for an indefinite period. The unanimous view among the member agencies represented on the SIG is that it would be in the U.S. national interest to allow new providers of international satellite facilities, provided INTELSAT were not exposed to significant economic harm. The President's determination reflects this view.

There is sufficient risk of significant adverse economic impact on INTELSAT to make blanket approval of unrestricted competition unwise. It would also be premature to take such a step until the results of cost-based access, new fiber optic cables, and new INTELSAT services are fully evaluated. Unrestricted entry could ultimately undermine the economic integrity of this important international enterprise, which would be inconsistent with the U.S. national interest.

56/ See, e.g., McGee, Predatory Price Cutting: The Standard Oil Company Case, 1 J. Law & Econ. 137 (1958); Telser, Cut-Throat Competition and the Long Purse, 9 J. Law & Econ. 259, 267 (1966). See also Berkey Photo, Inc. v. Eastman Kodak Co., 603 F.2d 262, 273, 294 (2d Cir. 1979); Northeastern Teleph. Co. v. AT&T, 651 F.2d 76, 93 (2d Cir. 1981).

The case has not been made for flatly disapproving the existing applications. The new entrants have made a threshold showing that services they propose are not now available on comparable terms. Limited entry along the lines recommended would further U.S. international trade interests, promote technological progress, and be consistent with national defense and security interests as well. Given these limitations, and the restrictions likely to be placed on any new satellite system by telecommunications authorities abroad, the risk of any significant adverse impact on INTELSAT is exceedingly small.

Further study and resulting delay is unlikely to further the national interest. Over a year of extensive study and review by the Executive branch has already taken place. This review has not resulted in the submission of credible information supplied by anyone, including INTELSAT and Comsat, which demonstrates plausible adverse effects. There is no basis to assume such information will be forthcoming.

Satellite systems entail significant lead time. Time is required to secure the requisite spacecraft, to reach launch agreements, and to secure operating arrangements. U.S. regulatory procedures are generally more time consuming than those abroad, where decisions can sometimes be reached and implemented without the regulatory proceedings and protracted court appeals characteristic of U.S. regulation. Consultation with INTELSAT is also required. Even were the pending applications approved by the FCC immediately, service would not be available for some time.

Government should not stifle private entrepreneurial initiatives absent sound and compelling public policy reasons. Such initiatives should not be discouraged when the services proposed could prove of value to customers, improve their productivity and efficiency, and thus enable American firms to compete more effectively both at home and abroad. The public policy case for continuing the status quo and flatly prohibiting additional international satellite systems is weak. Simply the pendency of U.S. applications has caused INTELSAT to accelerate plans for special business-oriented services and has precipitated a beneficial review of competitive conditions in the international satellite field generally. Further study and inevitable delay are unlikely to yield public dividends commensurate with the economic costs imposed.

It is the view of the Executive branch that the national interest will be furthered by approving additional international communications satellite systems subject to limitations designed to minimize adverse effects on INTELSAT. Specifically, additional systems should be restricted to providing services through the sale or long-term lease of transponders or space segment capacity for communications not interconnected with public-switched message networks (except for emergency restoration service). Consultation must be undertaken with INTELSAT pursuant to Article XIV(d) of the Definitive Agreement.

APPENDIX A

THE WHITE HOUSE

WASHINGTON

November 28, 1984

Presidential Determination
No. 85-2

MEMORANDUM FOR THE SECRETARY OF STATE
THE SECRETARY OF COMMERCE

By virtue of the authority vested in me by the Constitution and statutes of the United States, including Sections 102(d) and 201(a) of the Communications Satellite Act of 1962, as amended (47 U.S.C. 701(d), 721(a)), I hereby determine that separate international communications satellite systems are required in the national interest. The United States, in order to meet its obligations under the Agreement Establishing the International Telecommunications Satellite Organization (INTELSAT) (TIAS 7532), shall consult with INTELSAT regarding such separate systems as are authorized by the Federal Communications Commission. You are directed jointly to inform the Federal Communications Commission of criteria necessary to ensure the United States meets its international obligations, and to further its telecommunications and foreign policy interests.

This determination shall be published in the Federal Register.

Ronald Reagan

48-586 O - 85 - 3

THE SECRETARY OF COMMERCE
Washington, D.C. 20230

November 30, 1984

Honorable George P. Shultz
Secretary of State
Washington, D.C. 20520

Dear George,

There are two matters regarding the President's determination on new international satellite systems that need to be clarified. First, the White House has directed our departments to examine the scope of INTELSAT's pricing flexibility. Second, our position on the related issue of direct access to INTELSAT should be made clear.

The executive agreement establishing INTELSAT generally requires uniform pricing for each service. Prices on heavily trafficked routes may now exceed costs while those on thin routes may be below costs. It is not clear whether INTELSAT could vary its prices under the agreement. If INTELSAT's prices on busy routes are artificially inflated, inefficient entry by new systems may be induced. INTELSAT should have pricing flexibility when confronted with actual or potential competition as long as the prices it charges cover its costs.

A related issue is direct, cost-based access to the INTELSAT space segment. Allowing users and carriers in addition to Comsat the option to deal with INTELSAT directly for competitive services would foster competition based on superior efficiency and foresight and tend to deter entry by inefficient systems.

We should express clear positions on these two important points in the filing we will soon be submitting jointly to the Federal Communications Commission. I have asked Dave Markey to work with Bill Schneider to ensure this is done.

Sincerely,

Secretary of Commerce

cc: Chairman Mark Fowler

THE SECRETARY OF STATE
WASHINGTON

412847

December 20, 1984

Dear Mac:

Thank you for your letter of November 30 relating to the President's determination on international satellite systems separate from INTELSAT. Your understanding conforms with ours that the White House is interested in having us examine the issues of pricing flexibility in INTELSAT and direct access to INTELSAT by users other than CONSAT.

We have received, and are reviewing, the draft paper prepared by NTIA which might be sent jointly to the FCC.

The Office of the Coordinator for International Communication and Information Policy, together with others concerned with the issue, are working with your staff on these and additional issues emanating from the Presidential determination.

Sincerely yours,

George

George P. Shultz

The Honorable
Malcolm Baldrige,
Secretary of Commerce.

cc: Chairman Mark Fowler

APPENDIX B

THE SECRETARY OF COMMERCE
Washington, D.C. 20230

November 28, 1984

Honorable Mark S. Fowler
Chairman
Federal Communications Commission
Washington, D. C. 20554

Dear Mr. Chairman:

The President has determined that separate international communications satellite systems are required in the national interest. He has also directed that we inform the Federal Communications Commission of criteria necessary to ensure the United States meets its international obligations and to further its telecommunications and foreign policy interests. Prior to final authorization by the Commission of any systems, to assure that the United States meets its obligations as a Party to the Agreement Establishing the International Telecommunications Satellite Organization (INTELSAT) (TIAS 7532):

(1) each system is to be restricted to providing services through the sale or long-term lease of transponders or space segment capacity for communications not interconnected with public-switched message networks (except for emergency restoration service); and,

(2) one or more foreign authorities are to authorize use of each system and enter into consultation procedures with the United States Party under Article XIV(d) of the INTELSAT Agreement to ensure technical compatibility and to avoid significant economic harm.

The President's determination, its conditions, and these criteria are premised on our review of the issues prompted by the applications now before the Commission. If proposals substantially different are forthcoming, further Executive Branch review may be required.

The Commission should afford interested parties an opportunity to submit timely comments on the pending applications in view of these Executive Branch recommendations.

A memorandum of law concerning Article XIV of the INTELSAT Agreement is enclosed.

Sincerely,

George P. Shultz
Secretary of State

Malcolm Baldrige
Secretary of Commerce

Enclosure

United States Department of State

The Legal Adviser

Washington, D.C. 20520

MEMORANDUM OF LAW

The Orion Satellite Corporation and International Satellite, Inc. Applications for International Satellite Communication Facilities

BACKGROUND AND QUESTION PRESENTED

The Orion Satellite Corporation (Orion) and International Satellite, Inc. have applied to the FCC for authority to provide privately owned international satellite communications facilities to customers on a commercial basis. Orion argues that its system, which would sell or lease transponders to major business users on both sides of the Atlantic, is subject to coordination with INTELSAT only for technical compatibility with the INTELSAT system. The essence of its argument is that it does not propose common carrier services and only such services are "public international telecommunications services" which require coordination with INTELSAT for avoidance of significant economic harm as well. Although International Satellite, Inc. (ISI) argues that its system will not cause significant economic harm to INTELSAT, it does not explicitly concede that its system is subject to coordination under Article XIV(d) of the INTELSAT Agreement.

These applications present the following threshhold legal question under the INTELSAT Agreement of 1971, TIAS 7532:

> Do the Orion and ISI proposals involve the use of non-INTELSAT space segment facilities for international "public telecommunications services" within the meaning of Article XIV(d), requiring coordination with INTELSAT for both technical compatibility and the avoidance of significant economic harm, or do they propose "specialized telecommunications services" under Article XIV(e) which require coordination for only technical compatibility?

SUMMARY

While the issue is not free from doubt, the sounder view appears to be that Orion and ISI would provide public international satellite telecommunications services within the

meaning of the INTELSAT Agreement. A non-profit satellite system to be used for in-house international telecommunications by the owner might not involve public services, but neither Orion nor ISI is proposing such a system. Nor would their proposals seem to fall within the intended scope of "specialized services", the other category of services requiring only technical coordination with INTELSAT. Thus the United States may authorize Orion and ISI consistently with its obligations under the INTELSAT agreement if they are coordinated under Article XIV(d) for technical compatibility and to avoid significant economic harm to INTELSAT.

A contrary reading would permit any INTELSAT party to authorize a commercial non-INTELSAT satellite system for international telecommunications services despite serious anticipated economic harm to INTELSAT, provided all transponders were dedicated to users by lease or sale. This would undermine the basic purpose of INTELSAT: to maintain a single global commercial telecommunications satellite system to provide worldwide expanded public telecommunications services.

ANALYSIS

1. Authorization of a space segment to provide public international telecommunications services requires technical and economic harm coordination with INTELSAT.

Under the definitive INTELSAT arrangements, the United States has an obligation, set out in the Agreement's preamble and made operative by Article XIV, to help maintain a single global commercial international telecommunications system as part of an improved global telecommunications network. The obligations extend to what is defined in the Agreement as the "space segment" of INTELSAT. This includes the satellites and related facilities and equipment which are required to support the operation of the satellites.

While available for other purposes, the INTELSAT Agreement contemplates use of the INTELSAT space segment essentially for international public telecommunications. It expressly permits parties to use non-INTELSAT space segment facilities to provide public domestic services [Article XIV(c)] or specialized services [Article XIV(e)] after coordination with INTELSAT solely for technical compatibility. The use of non-INTELSAT space segment for international public telecommunications services [Article XIV(d)] is contemplated after consulation

with INTELSAT to ensure technical compatibility and to determine that the services will not cause significant economic harm to the INTELSAT system. Article XIV(g) totally excepts non-INTELSAT space segment facilities used solely for national security purposes. The XIV(d) and (e) provisions are the crux of the issue.

The coordination requirements of Article XIV are a key element of the general obligation of INTELSAT members to help maintain INTELSAT as a single global telecommunications network. The INTELSAT Agreement negotiating history shows that Article XIV was a compromise between the desire of certain European countries, led by France, that the Agreement allow for possible "regional" satellite systems, and the desire of the United States that other international satellite systems be precluded. France, in fact, proposed that INTELSAT be only a federation of regional systems. Several definitions of what would constitute a regional system were put forward, but none was adopted in the final text. It appears that the negotiators felt that the economic harm test incorprated in Article XIV(d) for international public telecommunication services made a definition unnecessary.

2. "Public telecommunications services" are not limited to "common carrier services".

The INTELSAT Agreement, Article I(k), defines public telecommunications services as follows:

> "Public telecommunication services" means fixed or mobile public telecommunication services which can be provided by satellite and which are available for use by the public, such as telephony, telegraphy, telex, facsimile, data transmission, transmission of radio and television programs between approved earth stations having access to the INTELSAT space segment for further transmission to the public, and leased circuits for any of these purposes; but excluding those mobile services of a type not provided under the Interim Agreement and the Special Agreement prior to the opening for signature of this Agreement, which are provided through mobile stations operating directly to a satellite which is designed, in whole or in part, to provide services relating to the safety or flight control of aircraft or to aviation or maritime radio navigation.

The applicable rules of international law governing the interpretation of international agreements do not sustain the view that the term "public telecommunications services" means

only services analogous to those considered "common carrier" in United States telecommunications law. In interpreting an international agreement, the general rule is that the terms of the agreement will be given their ordinary meaning in the context of the entire agreement and in light of its object and purpose, unless it can be established that the parties intended a special meaning to attach. The rules call for taking into account as well, inter alia, any subsequent practice in the application of the treaty. Secondary sources of interpretation can be resorted to in order to confirm the resulting interpretation or to resolve ambiguities. These secondary sources include the agreement's preparatory work and the circumstances of its conclusion. The purpose of all the rules is to establish the agreed intent of the parties, as reflected in the text. (See the Vienna Convention on the Law of Treaties, Articles 31 and 32, which the United States accepts as a generally accurate statement of the applicable international law on the interpretation of international agreements.)

Applying these rules, we note first that, while it was certainly contemplated that access in the United States to the INTELSAT space segment would be made through common carriers, there is nothing in the text of the INTELSAT Agreement which links or limits the concept of "available to the public" in the definition of "public telecommunications services" to the concept of common carriage, which is essentially a United States domestic regulatory concept. Nor is there anything in the text which links or limits that concept to the analogous term "public correspondence", used in the ITU Radio Regulations, where it is defined as: "any telecommunication which the offices and stations must, by reasons of their being at the disposal of the public, accept for transmission." Radio Regulations, Chapter I, Article 1, Section 5.1.

The text of the INTELSAT definition appears to be largely self-contained and susceptible of a reasonable meaning in context without resorting to the special meaning given the term in the regulatory framework of one of the participants or in a different agreement which defines an analogous term for a different object and purpose. Article I(k) defines "public international telecommunications services" by reference to types of services, e.g., telephony and telegraphy, which were services to which the public had access at the time of the INTELSAT negotiations. It appears to use the phrase "available for use by the public" to make clear that new telecomunications services which satellites could provide would fall under the

INTELSAT mandate as they came into public use. This construction of the phrase "available for use by the public" appears to be in accord with INTELSAT's practice in interpreting the concept of public telecommunications services over the years.

The definition itself appears to contemplate expressly that such services will be considered "public" even when offered via the leasing of a circuit by INTELSAT through one of its members. There is no requirement that the lease be only to a common carrier rather than an entity or small group of entities for their own communications needs.

The strongest argument for the interpretation put forth by Orion is that the concept "public telecommunications" and the analagous term "public correspondence" were in use at the time of the INTELSAT negotiations in both the U.S. domestic telecommunications field and in the ITU Radio Regulations, a broad multilateral telecommunications instrument with which all the participants in the INTELSAT negotiations were familiar. In both those settings it denoted, inter alia, availability to the public at large, not just selected customers, a key element of common carriage. However, that fact does not appear to be sufficient to establish legally that the parties to the INTELSAT Agreement intended to so link and limit it, in light of a number of factors:

First, there are many different definitions of "public".

Second, within the telecommunications authorities and administrations of most of the participants in the INTELSAT negotiations, provision of circuits dedicated to one user's own communications are considered part of the public network, and wholly "private" system are not a feature.

Third, the practice of the parties in the application of the INTELSAT Agreement includes the authorization of circuits dedicated to direct use by an end user, not merely circuits for use by a carrier offering telecommunications services to the public at large.

Fourth, it has not been U.S. practice under the INTELSAT Agreement to equate "public" with "common carrier". The FCC has held entities purchasing transponders not to be common carriers, yet the services they provided have been coordinated with INTELSAT as domestic public telecommunications services under Article XIV(c).

Fifth, the concept of common carriage, as it existed in the United States at the time of the INTELSAT Agreement, is itself shifting as formerly regulated services are deregulated and new services come on stream in a deregulatory climate. For example, in the Computer II decision, the FCC decided to forebear from regulating computer processing type services which, nevertheless, are services offered to the public and are not "private" services.

Finally, the theory that "public international telecommunications services" under the INTELSAT Agreement do not include the provision of a space segment on a commercial basis to users who own or lease individual transponders on the satellite would allow any INTELSAT member to authorize the establishment of such a space segment even if it were to do significant economic harm to INTELSAT. This would appear to run counter to the object and purpose of the Agreement, the maintenance of a "single global commercial satellite telecommunications system," to provide the space segment required for expanded "international public telecommunications services of high quality and reliability to be available...to all areas of the world." [Preamble, Article III and Article XIV(a)].

The Orion application cites INTELSAT's non-discrimination provision as an indication that "public telecommunications service" under INTELSAT means common carrier service. However, the "non-discrimination" clause cited by Orion, which occurs in the Preamble to the INTELSAT Agreement, clearly refers to the requirement of the Agreement that services be available on a non-discriminatory basis to the nations, large and small, developed and developing, who are members of INTELSAT. This is consistent with the non-discrimination policy in the Communications Satellite Act. It does not refer to a requirement that INTELSAT be restricted to services made available to all members of the potential user public in participating states on a non-discriminatory basis.

3. Although a private non-commercial space segment might not require economic harm coordination with INTELSAT, the proposals are not for such service.

There is no indication that the development of purely private space telecommunications systems was considered by the negotiators of the INTELSAT Agreement or that such limited satellite systems would, in any event, be likely to cause

significant economic harm. Nevertheless, from the INTELSAT Agreement's Article 1(k) reference to leased circuits and the overall object and purpose of INTELSAT as a single "commercial" telecommunication system, one might logically infer that the INTELSAT Agreement does not require economic harm coordination for a privately-owned satellite system in which all the capacity is dedicated to the communications needs of its owner. However, the proposals do not involve a privately-owned satellite for exclusive owner use.

While not necessarily dispositive of the INTELSAT interpretation issue, neither Orion nor ISI proposes a genuinely private facility even in U.S. regulatory terms. The FCC's regulations on private radio systems are found in 47 CFR Part 90. The services most analogous to those proposed to be provided by Orion and ISI are found in Subpart D, Industrial Radio Services. These are services which have been established by companies to satisfy their own communications needs. For example, a pipeline transmission company has been permitted to establish a private communications system to serve itself along its right of way. The Commission's regulations (Subpart M) permit companies operating these private systems to provide services to others, or permit any person to provide private services to any person eligible for licensing under Subpart D. However, the Subpart M regulations permit the arrangements only on a "not-for-profit, cost-shared basis." Both Orion and ISI intend to sell or lease satellite transponders, and to maintain satellite control centers and furnish telemetry, tracking, and control functions for a profit. Neither Orion nor ISI will therefore be a private system as those systems are defined in the FCC regulations.

4. The proposals are not for the type of services which the "specialized services" category, requiring no economic harm coordination, was intended to include.

The INTELSAT Agreement, Article I(l), defines "specialized telecommunications services" as:

> telecommunications services which can be provided by satellite, other than those defined in paragraph (k) of this Article ["public telecommunications services"], including, but not limited to, radio navigation services, broadcasting satellite services for reception by the general public, space research services, meteorological services, and earth resource services.

While the category of "specialized services" might be a catch-all to assure that any service which is not a public service would, nevertheless, be technically coordinated with INTELSAT under Article XIV(e), the drafters had certain kinds of exceptions in mind for its principal content. The negotiating history of the INTELSAT Agreement gives clear guidance that "specialized" as opposed to "public" services were intended to comprise principally those services, excluding generalized telecommunications, under the direct control of governments as a matter of special national policy (such as direct broadcasting) or services provided by governmental or inter-governmental entities incident to their functions. The negotiators intended to permit members and intergovernmental organizations full freedom to provide such services outside of and without regard to the economic well-being of INTELSAT. Numerous references in the negotiating history indicate that, before INTELSAT undertakes specialized services, it should consult with the U.N. specialized agencies already involved in providing such services, such as the International Civil Aviation Organization (ICAO) or the International Maritime Consultative Organization (IMCO).

The data and TV services that Orion and ISI propose to offer are not specialized services within the sense of that term as used in the INTELSAT Agreement.

CONCLUSION

While the issue is not free from doubt, the proposals would appear to contemplate providing public international telecommunications and require coordination with INTELSAT both to avoid economic harm and for technical compatibility.

Davis R. Robinson

L/EB:LH:11/21/83

BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
Washington, D. C. 20554

FCC 84-632
35383

In the matter of	)	
	)	
Establishment of Satellite Systems Providing International Communications	)	CC Docket No. 84-1299
	)	

NOTICE OF INQUIRY AND PROPOSED RULEMAKING

Adopted: December 19, 1984 ; Released: January 4, 1985

By the Commission:

1. Notice is hereby given pursuant to Section 403 of the Communications Act of 1934, as amended, 47 U.S.C. § 403 (1984), Section 553(b) of the Administrative Procedure Act, 5 U.S.C. § 553(b)(1984), and Sections 1.412 and 1.430 of the Commission's Rules and Regulations, 47 C.F.R. §§ 1.412, 1.430 (1984), of the initiation of an inquiry and proposed rulemaking regarding the construction and operation of satellite systems providing international services. The purpose of this notice is to solicit data and analyses regarding issues that have arisen in connection with the filing of a series of applications for authority to establish communications satellites that would provide international services, and to obtain comments on the recent executive branch decision that such systems are "required in the national interest" subject to certain limitations.

2. These applications are those filed by the Orion Satellite Corporation ("Orion"), File No. CSS-83-002-P, on March 11, 1983; by International Satellite, Inc. ("ISI"), File Nos. CSS-83-004-P(LA), I-P-C-83-073, on August 12, 1983; by RCA American Communications, Inc. ("RCA"), File No. I-T-C-84-085, on February 13, 1984; by Cygnus Satellite Corporation ("Cygnus"), File No. CSS-84-002-P(LA), on March 7, 1984; and by Pan American Satellite Corporation ("PanAmSat"), File No. CSS-84-004-P(LA), on May 31, 1984. [1]

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1 Systematics General Corporation ("Systematics") filed two applications to construct, launch, and operate satellite systems providing international services (File Nos. CSS-84-005-P(LA), CSS-84-006-P(LA)) on June 12, 1984. Systematics filed a motion to withdraw both

3. Communications Satellite Corporation ("Comsat") has filed petitions to deny each of the applications listed above. Several other parties have filed comments.

4. On April 6, 1983, the Department of State and the Department of Commerce sent a joint letter regarding the Orion application to the Commission requesting that the Commission refrain from taking any final action on the application until such time as an executive branch group could review and study the application's impact on the national interest and foreign policy of the United States. [2] On August 26, 1983, following the filing of ISI's application, the Department of Commerce sent a letter to the Commission which again requested that the Commission not take any final action on the applications. [3] The letter stated that the filing of a second application for international satellite services raised new considerations which would have to be included in the executive branch analysis.

5. On November 28, 1984, President Reagan signed a presidential determination that alternative satellite systems were "required in the

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applications on July 27, 1984. Under delegated authority, the Commission dismissed the applications without prejudice by letter dated August 6, 1984 pursuant to § 1.748(a) of the Commission's Rules and Regulations, 47 C.F.R. § 1.748 (a)(1984).

In addition, Western Union Telegraph Co. requested, and was granted, a waiver to spend additional money to modify its previously authorized WESTAR VI-S domestic satellite (File No. 1144-DSS-P/LA-84) to allow 6 transponders to provide coverage of Central and South America. Letter from Chief, Domestic Facilities Division, Common Carrier Bureau, to Robert N. Green, Associate Counsel, Western Union Telegraph Company (July 20, 1984).

2 Letter from David J. Markey, Assistant Secretary - Designate for Communications and Information, and Diana Lady Dougan, Coordinator, International Communications and Information Policy, to the Chairman of the Federal Communications Commission (April 6, 1983).

3 Letter from David J. Markey, Assistant Secretary - Designate for Communications and Information, to the Chairman of the Federal Communications Commission (August 26, 1983).

national interest" within the meaning of §§ 102(d) and 201(a) of the Communications Satellite Act. The President's determination states that the United States shall consult with Intelsat regarding such systems "as are authorized by the Federal Communications Commission." The determination is included as Attachment A to this Notice* At the direction of the President, the Department of State and Department of Commerce jointly informed the Commission, by letter, of the President's decision and the criteria necessary to ensure that the United States meets its international obligations and to further U.S. telecommunications and foreign policy interests.[4] A copy of the State/Commerce letter appears as Attachment B to this Notice.* The letter proposes that two restrictions be imposed on the alternative systems prior to final authorization by the Commission:

(1) each system is to be restricted to providing services through the sale or long-term lease of transponders or space segment capacity for communications not interconnected with public-switched message networks (except for emergency restoration service); and,

(2) one or more foreign authorities are to authorize use of each system and enter into consultation procedures with the United States Party under Article XIV(d) of the Intelsat Agreement to ensure technical compatibility and to avoid significant economic harm.

6. The executive branch has indicated that an executive branch report detailing the grounds for its action may be submitted as a part of this proceeding. Interested parties will have an opportunity to reply to any such submission.

I. Background

7. Orion's proposed system would consist of two in-orbit satellites and one ground spare, with each satellite having 22 transponders providing 36 MHz of useable bandwidth per transponder. The satellites' signals would cover the eastern portion of North America and the western portion of Europe and would transmit and receive in the 11/14 GHz frequency bands. The proposed satellites would be designed to provide video, data, and audio services using digital and analog modulation techniques. The video services would consist of both full-frame, full-speed video for television programming, and compressed, teleconferencing capabilities. Each satellite's capacity would exceed the equivalent of 20,000 voice-grade half-circuits, 22 full rate video signals, or 1.4 Gbps of data signals.

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4 Letter from George P. Shultz, Secretary of State, and Malcolm Baldridge, Secretary of Commerce, to Mark S. Fowler, Chairman, Federal Communications Commission (November 28, 1984).

* Attachments A and B may be found as Appendix A and B at the end of "White Paper on New International Satellite Systems preceding this FCC notice.

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Orion states in its application that it would not operate as a common carrier because it would sell or lease, over the life of the satellite, transponder capacity on a non-tariffed basis to users on either side of the Atlantic.

8. ISI's proposed system would consist of two in-orbit satellites and one ground spare, with each satellite having 32 receive and transmit channels (over 32 transponders) providing 54 MHz of useable bandwidth per channel. The satellites' signals would cover the contiguous 48 United States (CONUS) and the western portion of Europe as far as the Adriatic Sea. The proposed system would transmit and receive in the 11-12/14 GHz frequency bands. The satellites would be designed to provide video, audio, and data services using both digital and analog modulation techniques. The video services would consist of both high-speed and slow-scan video teleconferencing and, along with the audio services, would encompass every kind of television and radio programming currently available in the United States and Europe. The data services would include TDX/telex, newswires, facsimile, and electronic mail. ISI states in its application that it would use a portion of its capacity to provide services on a tariffed common carrier basis. ISI would sell or lease the remainder of its capacity in the same manner as that proposed by Orion.

9. Cygnus' proposed system would consist of two in-orbit satellites and one ground spare, with each satellite having 16 transponders providing 54 MHz of useable bandwidth per transponder. The satellites' signals would cover CONUS and the western portion of Europe. The system also would have a spot beam which would provide service to Puerto Rico, the U.S. Virgin Islands, the Caribbean Basin, and portions of Central America. The system would operate in the 11-12/14 GHz frequency bands and be able to operate with a variety of earth stations including the inexpensive "micro" earth stations (e.g., roof-top antennas) as well as the larger "mini" and "main" earth stations.[5] The satellites would be designed to provide digital communications services including video teleconferencing, high-speed facsimile, computer-to-computer communications, remote printing, teletext, videotext, and data collection and distribution services. Cygnus states in its application that it would offer all of its transmission capacity on a non-common carrier basis through long-term leases or transponder sales.

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5 Mini earth stations generally have antennas ranging in size from 2 to 4.5 meters. Main earth stations have antennas that are larger than 4.5 meters. See Cygnus Satellite Corporation application, File No. CSS-84-002-P(LA), at 8.

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10. PanAmSat's proposed system would consist of one in-orbit satellite and one ground spare. Twelve of the satellite's 36 transponders would be used for international traffic between North and South America. The remaining 24 would be used for domestic service in South America. The twelve international transponders would have 72 MHz of useable bandwidth per transponder and would be used to provide links between New York, Miami, the South American continent, and parts of Central America, the Caribbean, and the Iberian peninsula. The system would uplink at 6.4-6.9 GHz and downlink at 10.7-11.2 GHz. The satellite would be designed to provide video and audio distribution services, specifically, distribution of television and radio programs from entities such as television networks, motion picture studios, cable systems, and news and wire services. PanAmSat proposes in its application to offer its transponder capacity on a non-common carrier basis for sale or long-term lease to both U.S. and foreign customers.

11. RCA's proposed system would consist of six transponders on its previously-authorized SATCOM VI domestic satellite. [6] The satellite would operate in the 4/6 GHz frequency band and have 36 MHz of useable bandwidth per transponder capable of covering CONUS and portions of Europe and Africa. The six transponders would be available for either domestic or international service because the satellite would be equipped with transfer components capable of switching the transponders' service areas to accommodate either service. The transponders would be used for video distribution, teleconferencing, private leased voice, and low-speed and medium-speed data communications. RCA states in its application that it would provide its services on a tariffed, common carrier basis, but it also states that it would make whole transponders available for customers with high capacity needs.

12. These applications are the first to be filed with the Commission that propose to construct, launch, and operate satellite systems capable of international service, other than those filed by Comsat as the U.S. Signatory to the International Telecommunications Satellite Organization ("Intelsat"). The applications, and the comments and petitions that have been filed in response to them, raise a variety of legal, foreign policy, economic, trade, and technical issues which the Commission previously has had no occasion to address. The overarching issue presented by the applications is whether the public interest will be served by granting them. To resolve this issue, the Commission must consider a question of fundamental U.S. policy, namely, the extent to which United States telecommunications users should be required to use Intelsat exclusively to

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6 RCA American Communications, Inc., Mimeo No. 33200, released August 4, 1983.

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meet their future international communication satellite needs. Our concern in disposing of the applications will be to develop a policy which will assure that U.S. needs are met in the future.

13. The Communications Satellite Act of 1962, 47 U.S.C. §§ 701-744 (1964), is one of the primary expressions of United States' policy on international commercial satellite systems. The Act's stated purposes are: (1) to promote the establishment of a commercial communications satellite system in order to serve the needs of all countries and to improve the global communications network; and (2) to contribute to world peace and understanding by establishing a system, through the cooperation of all countries, that benefits the economically less developed countries as well as the economically developed countries. 47 U.S.C. § 701(a) and (b). The Act provides that the United States will participate in the organization and operation of such a satellite system through a private corporation formed under the Satellite Act and subject to government oversight. 47 U.S.C. § 701(c). In addition, the Act states that additional satellite systems are not precluded, if the systems are necessary to meet unique governmental needs or are otherwise required in the national interest. 47 U.S.C. § 701(d).

14. The global communications satellite system envisioned by the Satellite Act is owned and operated by Intelsat, an independent self-supporting organization comprised of 109 member countries. The United States' signatory to Intelsat is Comsat, a private corporation created pursuant to the Satellite Act. The definitive arrangements which formally establish Intelsat consist of two separate international agreements which set out the duties and obligations of the participating governments and of the actual investors and participants in Intelsat. These arrangements became effective in 1973, although Intelsat has been operational since 1964. Since its birth in 1964, Intelsat has grown rapidly, reporting $315 million in total revenues for 1982 and projecting $391 million in total revenues for 1983. [7]

15. The Intelsat global satellite system is composed of a space segment and a ground segment. The space segment consists of communications satellites and related equipment necessary to operate these satellites, all of which is owned by Intelsat. The ground segment consists of various earth stations, located throughout the globe, which transmit and receive signals from Intelsat satellites. The earth stations generally are owned and operated by the telecommunications entities of the countries in which they are located. The Intelsat global system, as of July, 1984, consists of 15

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7 Intelsat, 1983 Annual Report 28 (1983).

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satellites in geostationary orbit. [8] The system had 410 earth stations in 1982, and Intelsat projected that 632 earth stations would be operating in the system by the end of 1983. [9]

16. The purpose of this proceeding is to obtain data and analyses regarding the possible effects of establishing alternative international communications satellite systems. Through this Notice, we seek information that will assist us in resolving a number of issues raised by the applications. In the following discussion, we will outline the issues upon which we are requesting comment. We expect the analyses, recommendations, and positions of commenting parties to be supported by specific information and data. Unsupported assumptions and conclusory statements will receive such weight as they merit.

II. Legal Issues

A. Consistency with Communications Satellite Act of 1962

17. The Commission has previously found that § 102(d) of the Communications Satellite Act of 1962 contemplates the establishment of international satellite systems, in addition to the Intelsat global system, when necessary to meet U.S. needs or to respond to changing satellite technology. [10] Section 102(d) provides as follows:

> It is not the intent of Congress by this chapter to preclude the use of the communications satellite system for domestic communication services where consistent with the provision of this chapter nor to preclude the creation of additional communications satellite systems, if required to meet unique

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8 Intelsat Document, "Intelsat Satellites in Orbit: Technical Status for the month of July 1984," Addendum No. I to BG-60-8E (August 15, 1984) (available in Public Reference Room (533), Federal Communications Commission).

9 Intelsat, 1983 Annual Report 15 (1983).

10 Transborder Satellite Video Services, 88 FCC 2d 258, 273 (1981).

governmental needs or if otherwise required in the national interest.

47 U.S.C.§ 701(d) (emphasis added). In addition, in language almost identical to that of of Section 102(d), Congress provided in § 201(a)(6) of the Act that the President shall "take all necessary steps to insure the availability and appropriate utilization of the communications satellite system for general governmental purposes except where a separate communications satellite system is required to meet unique governmental needs, or is otherwise required in the national interest." 47 U.S.C. § 721 (a)(6) (emphasis added).

18. The applications before us, therefore, raise issues regarding the factors we should consider in determining when the "national interest" standard of these statutory sections has been met. In opposing the applications, Comsat has argued that the clause "required in the national interest" creates a high threshold standard which must be satisfied before the applications can be granted. Comsat maintains that the Commission's Transborder Decisions [11] and the views of the executive branch on the transborder applications [12] set forth the showing required of the applicants to satisfy the national interest standard. Comsat argues that the applications fail to make that showing. In contrast, the applicants generally maintain that the national interest standard is satisfied by the variety of benefits that they believe will result from authorization of

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11 Transborder Satellite Video Services, 88 FCC 2d 258 (1981) (Transborder I). See also Satellite Business Systems, 88 FCC 2d 195 (1981), and American Satellite Company, 88 FCC 2d 128 (1982), Eastern Microwave, Inc., File Nos. I-P-C-81-049, et al., Mimeo No. 2617, released March 1, 1983 (Transborder II); American Telephone and Telegraph Company, File Nos. I-P-C-82-048, et al., Mimeo No. 6119, released August 26, 1983 (Transborder III); Bonneville Satellite Corp., et al., File Nos. I-T-C-83-148, et al., Mimeo No. 1554, released December 29, 1983 (Transborder IV); Western Union Telegraph Company, et al., File Nos. I-T-C-83-068, et al., Mimeo No. 3286, released April 4, 1984 (Transborder V); Eastern Microwave, Inc., et al., File Nos. I-T-C-84-095, et al., Mimeo No. 6425, released September 11, 1984 (Transborder VI).

12 Letter from the James L. Buckley, Under Secretary of State for Security Assistance, Science and Technology, to Mark S. Fowler, Chairman, Federal Communications Commission (July 23, 1981), reprinted in Transborder Satellite Video Services, 88 FCC 2d 258, 267 (1981).

alternative satellite systems, e.g., lower rates, new services, new markets for U.S. services and products, and a better U.S. defense.

19. As we noted in paragraph 5, supra, President Reagan has signed a presidential determination that alternative satellite systems are "required in the national interest" within the meaning of §§ 102 (d) and 201 (a) of the Communications Satellite Act. The executive branch's determination reflects its experience with, and responsibility for, foreign policy and international trade issues. The Commission recognizes that it is appropriate to defer to the executive branch on such issues. At the same time, our analysis of the "national interest" under the Communications Satellite Act must also include consideration of telecommunications policy issues. In addition, the Communications Act assigns responsibility to the Commission for determining where the ultimate public interest lies in telecommunications policy. Accordingly, the Commission may be required to consider factors in addition to the Presidential determination in order to assess whether the national interest would be served by authorization of alternative satellite systems. We invite comments on the additional factors, if any, we should consider in determining whether a grant of the applications before us would be in the national interest within the meaning of Section 102(d). We ask that comments consider the purposes and objectives of the Satellite Act in the context of the development of telecommunications technology and the communications satellite industry since enactment. Commenters should identify specifically any marketplace trends or structural features which we should take into account when we interpret the statute. Comments should also address whether the criteria identified in the Transborder decisions should apply to the applications before us, and if not, what criteria should be included in our consideration. *

20. We also invite comments as to the applicability of MCI Telecommunications Corp. v. FCC, 561 F. 2d 1365 (1977), cert. denied, 434 U.S. 1040 (1978), to the restriction proposed jointly by the Departments of State and Commerce that the proposed systems only provide services "through the sale or long-term lease of transponders or space segment capacity for communications not interconnected with public-switched message networks." Comments should address the interaction of the Communications Satellite Act and the Intelsat Agreement with the usual standards for authorizing facilities and imposing service or other restrictions under Section 214 of the Communications Act. Commenters should consider the need for such a service restriction and the legal standards by which it may be imposed. In addition, if a service restriction is imposed, commentors should address whether there should be a time limit placed on the restriction and, if so, for what time period should the restriction be imposed. We caution commenters to be aware that some of the applications before us seek only Title III authority while others seek both Title III and Section 214 authority.

B. Obligations Under the Intelsat Agreement

21. The applications also raise issues concerning our obligations under the Intelsat Agreement. [13] Article XIV of the Intelsat Agreement sets out certain rights and obligations of the parties and signatories. [14] Subpart (a) of the article provides that the parties and signatories shall act consistently with, and in furtherance of, the principles in the Preamble and other provisions of the Agreement when exercising their rights and fulfilling their obligations. [15] The Preamble states that the parties to the agreement desire to achieve a single global commercial telecommunications satellite system as part of an improved global telecommunications network in order to provide telecommunications services throughout the world with the most efficient and economic facilities. [16] Article XIV recognises the possibility that parties to the agreement may establish satellite systems in addition to that operated by Intelsat. Subpart (d) requires parties to coordinate with Intelsat the use of non-Intelsat space segment facilities for international public telecommunications services, stating as follows:

> To the extent that any Party or Signatory or person within the jurisdiction of a Party intends individually or jointly to establish, acquire or utilise space segment facilities separate from the INTELSAT space segment facilities to meet its international public

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13 An international agreement not directly at issue in this proceeding is the International Telecommunication Union Radio Regulations, a treaty ratified by the United States in September 1983. That treaty establishes procedures and deadlines for the exchange of technical information necessary to coordinate characteristics of satellite networks prior to their implementation, in order to achieve technical compatibility with other networks, and to secure international recognition of frequency assignments to such networks.

14 Intelsat Intergovernmental Agreement, August 20, 1971, 23 U.S.T. 3813, 3853, TIAS No. 7532.

15 Id.

16 Id. at 3814.

> telecommunications services requirements, such Party or Signatory, prior to the establishment, acquisition or utilization of such facilities, shall furnish all relevant information to and shall consult with the Assembly of Parties, through the Board of Governors, to ensure technical compatibility of such facilities and their operation with the use of the radio frequency spectrum and orbital space by the existing or planned INTELSAT space segment and to avoid significant economic harm to the global system of INTELSAT. Upon such consultation, the Assembly of Parties, taking into the account the advice of the Board of Governors, shall express, in the form of recommendations, its findings regarding the considerations set out in this paragraph, and further regarding the assurance that the provision or utilization of such facilities shall not prejudice the establishment of direct telecommunication links through the Intelsat space segment among all the participants.

23 U.S.T. at 3854 (emphasis added). On several previous occasions, Intelsat has coordinated favorably, pursuant to this section, separate satellite facilities providing international public telecommunications services. Intelsat found that four alternative satellite systems -- the PALAPA-B system serving Indonesian, Malaysia, Philippines, Singapore, and Thailand, the European Communications System (ECS) serving countries in western Europe, the ARABSAT system serving countries in the Near East, and the INTERSPUTNIK system for use between Algeria and several European countries, the U.S.S.R., and Cuba --were technically compatible with, and would not cause significant economic harm to, the global system. [17]

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17 See Transborder Satellite Video Services, 88 FCC 2d 258, 275-276 (1981). Intelsat also has authorized the provision of international services via domestic satellite systems finding that such service would not cause significant economic harm. Intelsat Document, "Policies, Criteria and Procedures for the Evaluation of Separate Systems Under Article XIV(d)," BG-60-69E, W/9/84 (August 22, 1984) (available in Public Reference Room (533), Federal Communications Commission).

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22. One of the applicants before this Commission has argued that Article XIV(d) does not apply to the system it proposes. Orion contends that it would not be providing "international public telecommunications services" within the meaning of Article XIV(d) [18] because it would be selling its transponders or leasing them on a long-term basis to users seeking to establish private systems. [19] Orion maintains that its proposal must be subjected only to the technical coordination mandated by Article XIV(e) of the Intelsat Agreement for "specialized telecommunications services." In its petition to deny Orion's application, Comsat disagrees with Orion's interpretation of Article XIV(d). In addition, the Commission has received from the Department of State a "Memorandum of Law" concluding that Orion would be providing "public international satellite telecommunications services" under Article XIV(d). The memorandum appears as an enclosure to Attachment B to this Notice. We invite comments on the legal analysis and conclusions contained in the memorandum.

23. We request comments as to whether the satellite equipment industry and the satellite services market have experienced changes or developments in technology or industry structure which affect the interpretation and application of Article XIV(d). In particular, commenters may wish to focus on the Transponder Sales decision [20] in which the Commission discussed the legal issues and factual circumstances relevant to its decision to permit sales in the domestic market like those contemplated by Orion. Commenters should address whether, and if so, how, the rationale of that decision may apply in conjunction with the Intelsat Agreement to the international market. Commenters should take into account the analysis contained in the Department of State's memorandum on this issue and their own analysis of that memorandum.

24. To the extent that the proposed U.S. systems would provide "international public telecommunication services," and would require

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18 Orion also relies on the definition for public telecommunications services appearing in Article I(k) of the Intelsat Agreement.

19 See generally Orion Application, FCC File No. CSS-83-002-P, Petition to Deny of Comsat, filed on April 15, 1983, Orion's Response, filed on April 28, 1983, and Comsat's Reply, filed on May 10, 1983.

20 Domestic Fixed-Satellite Transponder Sales, 90 FCC 2d 1238 (1982), aff'd sub nom., World Communications, Inc. v. FCC, 735 F.2d 1465 (D.C. Cir. 1984).

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coordination under Article XIV(d), the U.S. government, under the terms of Article XIV(d), would be required to consult with Intelsat to avoid, inter alia, "significant economic harm" to Intelsat. The criteria for assessing "significant economic harm" are currently the subject of considerable discussion within the international telecommunications community.[21] The Commission invites comments as to the appropriate criteria for determining whether an alternative satellite system would cause economic harm to Intelsat and for measuring the degree of harm. Commenters are further invited to address the degree of harm which constitutes "significant" harm under Article XIV(d). Comments should focus on the language, intent, and drafting history of Article XIV and on technological or structural developments in the satellite industry and services market which may bear on this issue. Previous Intelsat coordinations of transborder applications and of alternative satellite systems will provide some guidance as to how Intelsat and its Signatories and Parties interpret and apply the term "significant economic harm."[22] Commenters should review these precedents and analyze the similarities and differences between the satellite systems which were the subject of past coordinations and the proposed satellite systems presently before the Commission.

25. One approach to defining and quantifying significant economic harm, as proposed in a report done for Intelsat, defines economic harm as the "calculated effect of [alternative satellite] systems on Intelsat's realized cost per unit of utilized space segment capacity"[23] and quantifies significant harm in terms of Intelsat's revenue requirements. There are, however, several problems with this approach. For example, the information and data requirements that will be needed to apply this approach on a prospective basis are formidable. Because many assumptions will be necessary to apply the concept, the reliability of the results may be questionable. We invite comments on the report. Commenters should focus on the definition of economic harm. Commenters also should evaluate the use of revenue requirements as the criteria for estimating economic harm to Intelsat. Commenters also should consider the criteria that are recommended in the Intelsat report for distinguishing significant economic harm from economic harm. The data that are needed to apply the approach that is

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21 See, e.g., Intelsat Document, supra, note 17.

22 See note 17, supra, and text accompanying.

23 Intelsat Document, "Report on the Study of Significant Economic Harm," BG-60-63E, W/9/84, p. 21 (August 15, 1984).

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recommended in the Intelsat report should be discussed with a view toward judging the reliability of the estimates. In addition, commenters should discuss the appropriateness of using a concept of economic harm that does not allow for changes in Intelsat's investment plans, operating procedures, and other steps that it could take to improve its economic efficiency. Drawing on their discussions of economic harm, commenters should propose other alternatives that could be used to assess the impact upon Intelsat, either overall or on a route-by-route basis, of both the entry of alternative systems and the measures Intelsat is able to take to maintain its financial viability.

26. The Commission is aware that there is some overlap between the issues surrounding the interpretation of "significant economic harm" in Article XIV(d) and those addressed by the inquiries set forth below regarding the broader economic impact of alternative satellite systems. We will expect commenters to integrate the economic data, analyses, and positions they may develop in response to the inquiries below with their interpretation of "significant economic harm."

27. We also invite comments regarding the meaning of Articles III and V of the Intelsat Agreement. Intelsat Intergovernmental Agreement, August 20, 1971, 23 U.S.T. 3813, 3819 and 3823, TIAS No. 7532. Some observers maintain that these Articles require Intelsat to charge a uniform price, throughout the globe, for satellite circuits. We invite comments as to whether Intelsat is required by the Agreement to charge globally-averaged rates. Commenters should support their positions with specific references to the Agreement and its drafting history.

III. Economic Considerations

28. In order to assess the economic impact that any authorization of alternative satellite systems might have, we seek comments, information, data, and analyses on a number of economic issues, outlined in detail below. We ask parties submitting comments to concentrate their efforts on the issues we identify. Estimates of quantitative economic impact must be supported fully by the inclusion of the data, assumptions, hypotheses, models, and procedures used to develop them. Such material must be discussed in complete detail. Similar material used to estimate underlying costs, revenues, changes in demand (including demand elasticities), and impact on rates also must be included to support the estimates.

29. As we noted in paragraph 11, above, the fundamental issue presented to the Commission by the alternative satellite applications is whether the public interest would be served by granting the applications. To resolve this issue, the Commission must identify the advantages of granting these applications and weigh them against any disadvantages. Specifically, the Commission seeks to identify the benefits to the public which would result from granting these applications. Would the applicants

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offer new and/or innovative services? Would prices be lowered? Are there network efficiencies to be gained? We ask commenters responding to the inquiries below to conclude by addressing how the public interest, as opposed to the interests of the various participants in the marketplace, would be affected by a grant of these applications.

A. Economic Impact on Intelsat

30. Intelsat is presently the principal supplier of international satellite circuits. If alternative satellite systems are authorized, Intelsat would be affected most directly by the entry of these firms into the market. To assist us in identifying the nature and extent of the potential impact on Intelsat, we invite comments on three areas of concern: (1) traffic diversion; (2) revenue impact; and (3) competitive response.

1. Traffic Diversion

31. Alternative satellite systems may compete with Intelsat for the same traffic and attract business away from Intelsat. On the other hand, the systems might serve primarily new users of international satellite services who are not currently, or would never be, Intelsat customers. The Commission seeks information that would help it determine whether, and to what extent, the alternative systems would carry traffic that would otherwise have been carried by Intelsat. In order to make this assessment, the Commission must consider a number of underlying issues which commenters should address.

32. First, the services offered by alternative systems may or may not be the same as those offered by Intelsat. They may also include some, but not all, of the services currently offered by Intelsat. Proponents of alternative satellite systems contend that the new systems would provide services different from those Intelsat offers. Other observers have argued that the proposed services are complementary to Intelsat's and thus would stimulate demand for them. On the other hand, opponents of the alternative systems argue that the proposed systems would provide the same services as Intelsat and, therefore, any traffic obtained by these new services would be traffic diverted from Intelsat. We invite comments on these arguments. Commenters should identify the differences and similarities between the services available from Intelsat and those proposed by the alternative systems. Specifically, commenters should also identify their bases for differentiating one service from another. Can services be defined by technical characteristics? If so, what are the technical dividing lines? Can services be grouped according to the characteristics of the user and, if so, what are those characteristics? Should we differentiate services for high-volume use from those for low-volume or occasional use? To what degree are services substitutable? Are services distinguishable where a system is fully digital? Commenters should also address whether the services can be differentiated on the basis of pricing techniques, marketing

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strategies, or geographic areas.

33. Second, as noted in paragraph 5, above, the Commission has received a letter signed jointly by the Secretary of Commerce and the Secretary of State setting forth "criteria necessary to ensure the United States meets its international obligations and to further its telecommunications and foreign policy interests." The letter states that, prior to "final authorization by the Commission," the alternative satellite systems are "to be restricted to providing services ... for communications not inter-connected with public-switched message networks." We invite comments on these "criteria." Commenters should address whether and to what extent such a restriction could be implemented in actual practice. Commenters should also attempt to identify the specific services which would fall within and outside the scope of the restriction and state the basis for so classifying such services. For example, many users of "public-switched message networks" employ private branch exchanges ("PBX's") capable of routing incoming traffic back out over the switched network. Would the restriction recommended by the State and Commerce Departments prohibit service by alternative systems to customers using PBX's at both ends of the satellite communication and, if so, how should such a prohibition be enforced?

34. Commenters should also focus on the effect such a restriction could have on the competitive viability of the alternative systems. In particular, we seek comments as to whether the recommended restriction would give Intelsat an incentive to engage in price discrimination between circuits that it leases to provide non-switched services like IBS, when it would face competition from alternative systems, and circuits that it leases to provide switched services. In addition, comments should include information and current data on the traffic volume of non-switched services, the projected demand for such services, the proportions of total international services represented by switched and non-switched services, the revenues attributable to each, the number of satellite transponders currently devoted to offering each service, and the amount of non-switched traffic the alternative systems can expect to carry, factoring in any projected increases in current traffic levels.

35. Third, if the new systems would offer services that are substantially equivalent to Intelsat's, there may be a potential for traffic diversion. The Commission seeks information regarding the foreseeable extent of the potential diversion. We solicit comments analyzing the amount of additional capacity that the alternative systems would introduce, with an explanation of the method used to measure that capacity, as compared to Intelsat's current (operational) capacity as well as its planned capacity over the useful life of each alternative system. Commenters should identify the alternative systems' capacity as a percentage of the increase in traffic projected during the useful lives of the alternative systems' satellites,

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with an explanation of the methodology underlying any projections. 24

36. Besides the alternative systems' capacity, other factors will determine whether such systems divert traffic, such as price-quality trade-offs between the services offered, the degree of differentiation between services, consumer responsiveness to price variations in the offerings of the various services, and the specific geographic and service markets selected for entry by the alternative systems. Comments should take these factors into account. Finally, commenters should specifically address how the level of potential diversion would be affected by restricting alternative systems to the non-switched market, as proposed in the State/Commerce letter.

37. Fourth, the new systems may stimulate demand for satellite services if price competition between systems develops and drives down prices. If demand is stimulated, the resulting increase in traffic may offset any shift of Intelsat's traffic to the alternative systems so that there is no overall decrease in Intelsat's traffic base. The Commission invites comments regarding the ability of new entrants to engage in price competition and the effect of such competition on Intelsat's prices and the demand for satellite services. Commenters should submit any traffic projections and analyses of changes in demand which take into account the possible stimulation of demand by the entry of alternative satellite systems. Commenters should also explain their method for identifying Intelsat's "prices." Specifically, commenters should address whether Intelsat's "prices" have the same function as other prices in the marketplace in terms of their impact on demand and resource allocation given that Intelsat's users are also owners who receive an annual revenue distribution from Intelsat.

38. Finally, the new systems may capture a part of the market previously served not by Intelsat but by submarine cables. With the introduction of fiber optic digital cables, satellites and cables will become increasingly interchangeable for many services (such as wide-band services or data transmissions) previously suitable only to provision via satellite. The Commission seeks assessments of the amount of traffic that could be attracted by the alternative satellite systems which would otherwise have been carried by submarine cables.

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24 Commentors may wish to consult the demand forecasts submitted by U.S. international carriers in the Commission's international facility planning proceedings.

2. Revenue Impact

39. Each of the factors and possible scenarios regarding Intelsat's traffic base outlined in the preceding paragraphs will have a revenue impact on Intelsat. The Commission seeks all available data that would assist it in quantifying the overall impact of each on Intelsat's net revenues including data regarding changes Intelsat could effect in its costs in the long run. In addition, we solicit analyses of the relationship between changes in Intelsat's revenues and its ability to provide service. Comments should address the effect authorization of additional satellite systems would have on Intelsat's ability to provide global service as well as service in specific regions and markets. Commenters should include discussion of the revenue level at which Intelsat could be expected to curtail expansion of its system, but retain its existing level of service, and the level at which Intelsat would be unable to continue providing its existing service. We emphasize that comments and analyses on this topic must be fully supported by the data, models, assumptions, and methodologies used to develop them.

3. Competitive Response

40. If alternative satellite systems are established, competition between the new systems and Intelsat might prompt Intelsat to take responsive action, such as changing its rate levels, rate structure and service offerings or reconfiguring its satellites or transponders. The Commission seeks to identify Intelsat's options in terms of responding to competition as well as the constraints on Intelsat's behavior resulting from such factors as its sunk capital investments, technological inflexibilities, and the pricing elasticities of demand for the services it offers. We ask commenters to focus in particular upon the extent of Intelsat's ability to change its rate structure in response to competition taking into account the legal barriers, if any, commenters may have identified in response to paragraph 26, supra. Is Intelsat able to vary its prices to meet actual or potential competition? Commenters should identify any constraints on Intelsat's pricing flexibility which may exist and the modification of Intelsat's pricing structure, if any, which would be necessary to ensure that Intelsat remains a viable competitive entity. In particular, would Intelsat have an incentive to engage in price discrimination between the geographic markets where entry occurs and those where no entry is anticipated? If such price discrimination occurs how will it affect Intelsat's revenues and the sharing of Intelsat's costs among signatories? We invite comments as to each of these factors as well as any other marketplace realities which would limit Intelsat's competitive response.

41. There are other ways in which Intelsat could respond to competition. Intelsat could improve its economic efficiency by reducing its costs and by better meeting its customer service requirements. For example, Intelsat may be able to reduce its costs by modifying its

investment program, reducing the amount of unused satellite capacity or taking greater advantage of technological change. Commenters should consider these factors in assessing Intelsat's response to new entry.

B. Impact on Users of International Communication Links

42. The establishment of alternative satellite systems will also affect users of satellite facilities, both the international service carriers who obtain satellite circuits to provide service to the public and consumers or end users. The Commission must insure that the policy it develops regarding alternative satellite systems takes into account the interests of both of these user groups. As discussed more fully below, we are seeking comments on the issues we have identified as pertinent to these groups. 25

1. Service Providers

43. Satellite capacity is purchased by several U.S. international service carriers to provide their various services to the public. Changes in the suppliers of satellite circuits and in the available capacity will have, therefore, a significant effect upon U.S. service providers. We invite comments on the nature of that effect. We recognize, however, that the international service carriers have interests which may diverge. Thus, different carriers or groups of carriers could be affected differently by the entry of alternative satellite systems. For example, some international carriers have substantial investments in submarine cable facilities which might influence their choice of facility without regard to pricing differences which may exist between Intelsat and the proposed systems. In addition, some carriers may purchase capacity in any new systems while others would prefer to obtain tariffed, short-term services like those available from Intelsat. Accordingly, commenters should address these differences between service providers when they respond to the points raised below.

44. We believe there are a number of potential effects of new entry that would be relevant to carriers and international service providers. The most obvious potential effect is that competition between Intelsat and the new systems could drive down the prices that service providers pay to obtain satellite capacity. Competition may also stimulate changes in the quality or range of satellite services offered to carriers in ways that would affect various carriers differently. The availability and reliability of satellite

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25 We invite parties to address the potential effects of new entry on foreign consumers, carriers, and service providers as well as U.S. consumers, carriers, and service providers.

circuits may also change as a result of competition. We invite comments on the likelihood that competitive entry by alternative systems would produce changes such as these and on the nature and extent of such changes. We are interested specifically in receiving estimates of the rates that the alternative systems would charge for each of the various offerings they propose in their applications, including tariffed services and transponder sales or leases. Such estimates should be accompanied by comparisons of the rates proposed by the alternative systems and those currently available for similar offerings. Commenters should also address whether the introduction of these satellite systems would promote or hinder the ability of service providers to offer new or innovative services.

45. Several of the applicants before the Commission have proposed to sell transponders or lease them on a long-term basis. We invite comments on the benefits and disadvantages of permitting carriers to purchase transponders or lease them on a long-term basis. Commenters should consider such factors as the benefits of capitalizing costs versus treating them as expenses and the differences in terms of cost predictability between owning capacity and obtaining it on a tariffed basis. In addition, we invite comments regarding the effect of transponder purchases on the availability, price, quality, and reliability of satellite circuits. [26]

3. Consumers

46. We invite comments on the impact of authorizing alternative satellite systems upon consumers of international communication services. Will consumers, on balance, be better off if additional systems are authorized? Because certain users may be affected differently from other users by the entry of these new satellite systems, we ask that commenters address these differences. Comments should address whether the entry of these systems would increase or decrease the availability, price, quality, and reliability of satellite services provided to end users. In addition, we invite comments on whether the sale or long-term lease of transponders by the alternative satellite systems would create a "bypass" problem, i.e., whether end users would purchase transponders in such high numbers that the carriers would be left with too small a number of remaining users to price their services competitively.

C. Equipment Manufacturers

47. Satellite equipment, including that associated with the launch vehicle, space segment, and ground segment, is manufactured by a number of

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26 See note 17, supra and text accompanying.

U.S. and foreign firms. Changes in the international satellite services market would have an impact on the world-wide satellite equipment industry. In order to assess this impact, the Commission requests comments containing information on the revenues of companies in the satellite equipment market. We seek data and analyses that will assist us in determining the revenues earned by United States, European, Japanese and other satellite manufacturers, individually and as a group, from the sale of satellite equipment. [27] We request that the information provided break down the revenue data into the space segment, launch vehicle and earth station equipment categories. We are particularly interested in receiving comments regarding the size of the world-wide equipment manufacturing industry and the percentage of the sales and revenues of equipment manufacturing companies which are attributable to Intelsat purchases.

48. In addition, we invite comments as to whether the authorization of alternative satellite systems would increase the demand for satellite equipment. Authorization of the alternative systems could increase demand for two reasons. First, the new systems themselves would purchase satellite equipment. Second, if the introduction of competition between Intelsat and the alternative systems stimulates demand for satellite services (because competition has driven prices down or has stimulated innovative services), both Intelsat and the alternative systems may require additional equipment. We invite comments on these points. We also ask commenters to address whether there would be a quantifiable relationship between the increase in satellite equipment sales and the increase in demand for international communications services which might be created by the alternative satellite systems.

49. Commenters should also address the impact alternative systems may have on the price and technological development of satellite equipment. The introduction of these systems could produce scale economies or stimulate manufacturing innovations that would permit lower prices overall for satellite equipment, which could, in turn, enable systems with smaller or specialized capacity to provide service at competitive prices. In addition, an expanded, competitive market for equipment may stimulate technological innovation in the design and performance of satellite equipment. The Commission solicits data and analyses regarding these possibilities and their effect on equipment manufacturers.

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27 Satellite equipment companies who respond to this Notice but are reluctant to provide such information because they believe it to be proprietary are advised to consult the Commission's Rules regarding requests for confidential treatment of submissions. See 47 C.F.R. § 0.459 (1984).

50. Finally, commenters should address the steps that the Commission could take to ensure that the market for such equipment is vigorously competitive. Specifically, commenters should identify the policies, rules, or other action required to protect domestic manufacturers from the anti-competitive actions, if any, of foreign entities. Commenters should also discuss the limitations on the Commission's ability to take such steps.

D. Alternative Methods for Promoting Efficiency

51. In addition to the introduction of alternative satellite systems, other mechanisms may exist which would increase efficiency in the provision of international satellite services. The Commission invites comments on possible options to increase efficiency. One option which commenters may wish to address is the role that direct access by U.S. carriers to the Intelsat space segment could play in the future. The Department of State and the Department of Commerce have indicated their belief that affording companies in addition to Comsat the option of dealing directly with Intelsat for competitive services is a necessary step to ensure that additional facilities are constructed only where economically and technically justified. Commenters are invited to address whether such an option would be economically and technically feasible in the environment which would be created through the entry of alternative satellite systems. Commenters addressing this issue may wish to consider the record in the Commission's proceeding on direct access. See Regulatory Policies Concerning Direct Access to Intelsat Space Segment for the U.S. International Service Carriers, 90 FCC 2d 1446 (1982) (notice of inquiry); FCC No. 84-129, 49 Fed. Reg. 19132 (1984) (report and order terminating the proceeding). While the decision on direct access was settled in the context of today's environment, the potential for separate international systems introduces new factors that may make direct access more feasible.

E. Marketplace Trends

52. The applicants before this Commission are not the first to propose the establishment of satellite systems other than Intelsat to provide international services. As we noted in paragraph 20, above, Intelsat has previously coordinated four systems providing service between countries served by Intelsat. In addition, there are a number of newly-proposed satellite systems which would be capable of providing international as well as domestic service. The United Kingdom has proposed the UNISAT system whose beam would cover the U.S. eastern seaboard and most of western Europe. France has proposed the TELECOM satellite whose beam would cover most of Europe and the French Caribbean, Eastern Canada, and the Indian Ocean. Spain has proposed the IBEROAMERICAN satellite whose beam would cover Spain and Latin America. Other systems have also been proposed by Japan for the Pacific Basin, by Sweden for all of Scandanavia, and by Luxembourg for

western Europe and possible transatlantic service.

53. The satellite systems listed above are not the only proposed or existing facilities which could have an impact on Intelsat's position in the market for international telecommunications service. Fiber optic cables are capable of providing many of the services that were previously available only via satellite due to the limitations inherent in analog cable technology. Moreover, fiber optic cables will introduce low cost, high capacity facilities into the international marketplace.

54. The Commission invites comments analyzing whether the structural and technological initiatives identified above represent an inexorable trend away from preservation of Intelsat's unique position as a provider of international satellite services. Are alternative satellite systems an inevitability? What forces in the global market confronting Intelsat contribute to this proliferation in alternative systems? What indications are there that other countries, besides the United States and the six countries identified above, are likely to establish alternative systems? Commenters are invited to submit all available data and analyses that would be helpful in characterizing the marketplace context in which satellite services are offered.

IV. Technical Issues

55. We also seek comment on certain technical issues regarding the efficient use of the electromagnetic spectrum and the geostationary-satellite orbit. Recently, the projected demand for orbital positions over the Atlantic Ocean has increased markedly for satellite networks, such as those proposed by the alternative systems, that would be operated in the 4/6 GHz and 11-12/14 GHz frequency bands. In particular, Intelsat has indicated that it plans to use a number of orbital positions over the Atlantic to provide its Intelsat Business Services as well as its more traditional services. In some cases, Intelsat's projected requirements would be in conflict with orbital positions requested by applicants for domestic and alternative international satellite systems.

56. Some observers have argued that a common-user system such as Intelsat's would more efficiently use the spectrum/orbit resources. However, other observers have argued that the use of individual networks, such as those proposed in the pending applications, would not necessarily be less efficient. Furthermore, these observers contend that in order for any satellite system to satisfy user demand for particular types of services —such as high-speed data services without intervening terrestrial links —the system would have to use satellite and earth station configurations or operational techniques which would be less efficient than other configurations, regardless of whether they are common-user systems. We believe that, in many cases, the extent to which a satellite network includes features which make it more spectrum/orbit efficient is determined

by the economic incentives of the network operator, whether the network is a common-user network or one of many individual networks. We request comments on the impact of the proposed systems on spectrum/orbit efficiency and seek, specifically, comments on the extent to which we can rely on economic incentives to achieve greater efficiency.

57. In licensing networks in the domestic fixed-satellite service, we have implemented technical standards intended to allow for the greatest number of satellites in the geostationary orbit and the greatest efficiency of those satellites. [28] In particular, these standards are designed to permit satellites operating in the same frequency bands to be located as close together as two degrees of orbital arc. We note that some of the applicants for authority to provide international service propose to engineer their networks to permit the location of other satellites, operating in the same frequency bands and having a common service area, within two degrees. The standards also require "full frequency re-use," to insure that the usable communications bandwidth on domestic satellites approaches 1000 MHz, and a minimum total transponder power capability for each satellite operating in a given band. The "full frequency re-use" and minimum power standards for domestic satellites cannot be directly applied to the proposed international systems because of the number of beams to be employed by those systems and the international treaty constraints on frequency use. However, some variation of these standards may be appropriate. Therefore, we also request comments on whether, and if so, to what extent, we should apply the standards developed for the domestic fixed-satellite service to any networks authorized for international service.

V. Conclusion

58. The Commission's overriding concern is to develop a policy with respect to the establishment of alternative satellite systems that will be based on an accurate assessment of the legal and economic issues raised by such systems. The information solicited above will be used to insure that our assessment reflects current marketplace realities. We encourage interested parties to submit data that is responsive to these concerns. We believe that the schedule that we are setting up for the submission of comments and replies is sufficient for parties to develop complete, current, and responsive data and analyses. Accordingly, motions for extension of

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28 Licensing of Space Stations in the Domestic Fixed-Satellite Service, 48 Fed. Reg. 40,233 (1983).

time or late-filed pleadings will be viewed unfavorably.

59. We instruct the Chief, Common Carrier Bureau, to supplement the record by obtaining any information necessary for the conduct of this proceeding.

60. For purposes of this non-restricted, informal inquiry and rulemaking proceeding, members of the public are advised that ex parte contacts are permitted from the time of issuance of a notice of inquiry and proposed rulemaking until the time a draft order proposing a substantive disposition of such proceeding is placed on the Commission's Sunshine Agenda. In general, an ex parte presentation is any written or oral communication (other than formal written comments/pleadings and oral arguments) between a person outside the Commission and a Commissioner or a member of the Commission's staff which addresses the merits of the proceedings. Any person who submits a written ex parte presentation must serve a copy of that presentation on the Commission's Secretary for inclusion in the public file. Any person who makes an oral ex parte presentation addressing matters not fully covered in any written comments previously filed in the proceeding must prepare a written summary of that presentation. On the day of oral presentation, that written summary must be served on the Commission's Secretary for inclusion in the public file, with a copy to the Commission official receiving the oral presentation. Each ex parte presentation discussed above must state on its face that the Secretary has been served, and must also state by docket number the proceeding to which it relates. See generally, Section 1.1231 of the Commission's rules, 47 C.F.R. § 1.1231. [29]

61. IT IS ORDERED, pursuant to Sections 4(i), (j), 214(d), 303(r), 309 and 403 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154 (i), (j), 214(d), 303(r), 309, 403 (1984), Sections 102(d), 201(c)(3), (4), (9), and (11) of the Communications Satellite Act of 1962, as amended, 47 U.S.C. §§ 701(d), 721(c)(3),(4), (9), (11)(1984), Section 553(b) of the Administrative Procedure Act, 5 U.S.C. § 553(b)(1984), and Sections 1.412 and 1.430 of the Commission's Rules and Regulations, 47 C.F.R. §§ 1.412, 1.430 (1984), that an inquiry and proposed rulemaking into the above-captioned matter is instituted.

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29 As provided in the Commission's public notice, Report No. I-3057, Mimeo No. 4716 (June 7, 1984), the satellite applications before us are governed by the ex parte rules which apply to restricted adjudicative proceedings, and therefore communications concerning those particular satellite applications will not be permitted in these proceedings. See 47 C.F.R. § 1.1223 (1984).

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62. IT IS FURTHERED ORDERED that interested persons may file comments on matters raised herein on or before February 14, 1985 and reply comments on or before March 7, 1985.

63. IT IS FURTHERED ORDERED that, in accordance with the provisions of Section 1.419 of the Commission's Rules and Regulations, 47 C.F.R. § 1.419 (1984), all participants in the proceeding ordered herein shall file with the Commission an original and five (5) copies of all comments and reply comments. In reaching a decision, the Commission may take into consideration information and ideas not contained in the comments, provided that such information is placed in the public file, and provided that the fact of the Commission's reliance on such information is noted in the Report and Order. Copies of comments and reply comments filed in this proceeding shall be available for public inspection during regular business hours in the Commission's reference room at its headquarters at 1919 M Street, N.W., Washington, D.C.

64. Pursuant to Section 605(b) of the Regulatory Flexibility Act (P.L. 96-354), IT IS CERTIFIED, that Sections 603 and 604 of the Act do not apply because this proposed rule or policy will not, if promulgated, have a significant economic impact on a substantial number of small entities. See 5 U.S.C. §§ 603, 604, 605(b) (1984). The proposed rule or policy will not have a significant economic impact on a substantial number of small businesses or other small entities because the Commission has not received, and does not anticipate receiving, a substantial number of applications from small businesses for authority to construct and operate satellite systems providing international communications services.

FEDERAL COMMUNICATIONS COMMISSION

William J. Tricarico
Secretary

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COMPETITION IN INTERNATIONAL TRANSMISSION FACILITIES

Rep. James T. Broyhill

James T. Broyhill represents the 10th Congressional District in the State of North Carolina. He was first elected to the U.S. House of Representatives in 1962 and began his 12th term when the 99th Congress convened in January 1985. Since Rep. Broyhill is a Republican, and therefore a member of the minority party in the House of Representatives, he does not hold any chairmanships. Nevertheless, because of his high seniority (he was 5th in seniority among Republicans and 27th in seniority of the total 435 Members of the House during the 98th Congress) he is the ranking minority member of the House Committee on Energy and Commerce. As the ranking minority member, he is a voting member of every Energy and Commerce Subcommittee, including the Subcommittee on Telecommunications, Consumer Protection, and Finance which has jurisdiction over communications. Rep. Broyhill received his B.S. degree in business administration in 1950 from the University of North Carolina at Chapel Hill. He also was awarded an honorary Doctor of Laws degree from Catawba College in Salisbury.

The opening of telecommunications markets to competition in the United States is well underway for domestic telecommunications services, but it is just beginning for international services. This article provides a brief overview of the development of telecommunications competition in the United States and concludes that the development of competition for international services in this country is both inevitable and highly desirable.

As recently as a decade ago, the domestic telecommunications industry in the United States was largely cartelized. For example, only telephone companies provided long distance telephone service, so those who wanted to make telephone calls to a distant city purchased long distance telephone service from their telephone company. Western Union was the sole provider of telegram service, so those who wanted to send a telegram from one city to another did so by going through the local Western Union office. And the telephone company was the only place to get a telephone instrument, so those who wanted to obtain a telephone leased it from their phone company.

Pressure to eliminate cartelization of the domestic telecommunications industry began in the 1950s as new technological developments created consumer demand for new services and products. Consumer demand, in turn, spurred interest by new companies in providing domestic telecommunications services in competition with the monopolists.

This article was prepared before President Reagan announced his decision regarding separate international satellite communication systems.

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However, outdated government regulatory policies perpetuated these monopolistic fiefdoms long after consumer interest in competitive alternatives arose. For example, the Federal Communications Commission (FCC) was hesitant to eliminate a longstanding FCC policy that prohibited everyone but the telephone companies from providing long distance telephone service. Moreover, the FCC was leery about changing its policy that prohibited companies other than Western Union from providing telegram services. And it was skeptical about revising its rules that allowed only local telephone companies to lease telephones.

But growing consumer demand invariably leads to a weakening of regulatory barriers to entry. And that is what happened here.

A 1956 ruling by a federal court was the opening that led to an eventual breakdown of regulatory barriers to competition in many facets of the domestic telecommunications industry. In that year, the U.S. Court of Appeals held unlawful an AT&T tariff that prohibited customers from using telephone equipment that was provided by an entity other than the local telephone company.[1]

Regulatory policies prohibiting non-telephone companies from building interstate electronic transmission systems to provide telephone service to the public were not eliminated until much later, even though the initial break came in 1958 when the FCC issued a decision permitting companies to establish interstate networks for their private use.[2] It was not until 1978, however, that FCC regulations were changed so that private networks could be used to offer long distance telephone service to the public in direct competition with service provided by telephone companies.[3]

Today, while regulatory policies still prohibit competition in certain aspects of the domestic telecommunications marketplace,[4] the bulk of legal barriers to entry have been removed. As a result, consumers are benefiting from new and innovative products and services at lower prices from a variety of suppliers.

However, the international telecommunications industry (that is the business of providing electronic transmission services to permit communications between the United States and foreign countries) remains largely a monopoly enterprise even today. While persons in the United States who desire to communicate with persons in foreign countries may subscribe to international communications services offered by a large number of companies,[5] a substantial component of the price charged for all of these services is fixed at the same level because all companies offering international services must utilize satellite transmission capacity that has been sold to them by the Communications Satellite Corporation (COMSAT).[6] For example, when a person in New York City asks Western Union to send a telex to London, Western Union transmits the telex by satellite using transmission capacity that it has obtained from COMSAT. And when a person in Washington, D.C. dials a Paris telephone number over AT&T's telephone network, AT&T transmits the call by satellite using transmission capacity which it has obtained from COMSAT.

The provision of satellite transmission capacity for electronic communications between the United States and foreign points is a big business for COMSAT. In 1983, it generated operating revenues for the company of $291 million and operating income of $111 million.[7]

Within the past few years, new companies have expressed growing interest in establishing their own satellite systems to compete directly with COMSAT.[8] In fact, at least five companies have developed detailed business plans within the past 24 months in which they propose to launch satellites and then lease transmission capacity to those in the United States desiring to communicate with people in other countries.[9]

However, as was the case in the domestic telecommunications industry, antiquated government regulatory policies have prevented the development of competition long after

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the expression of interest by outside parties in providing competing services. The five U.S. companies that want to establish competing satellite systems are powerless to develop these systems until the FCC approves their applications.[10] However, the FCC, meanwhile, has withheld action on these applications due to political pressure from the special interests who oppose competition.[11] On November 28, 1984, however, President Reagan issued a statement supporting competition, and he instructed the Secretaries of Commerce and State to notify the FCC of his views and urge the agency to grant the applications.

Just as marketplace pressure brought about elimination of antiquated government-imposed barriers to competition in many aspects of the domestic telecommunications industry, I am confident that continuing marketplace pressure will lead the FCC eventually to license new satellite systems so that COMSAT will face competition in the provision of transmission capacity for international communications.

The benefits to consumers of such competition are evident. The existence of strong competition in the supply of satellite transmission capacity will help ensure that the prices for such capacity are kept low. Moreover, the existence of strong competitors should promote technological innovation as competitors search for ways to develop transmission capacity that meets consumer demand.

Because COMSAT has invested heavily in recent years in a variety of business activities in which substantial competition exists, the development of strong competition in the supply of satellite transmission capacity will also help consumers by reducing substantial regulatory costs now imposed upon them. For example, COMSAT has invested millions of dollars in a subsidiary that eventually will provide several channels of pay television programming to hundreds of thousands of homes in the United States. It also operates a business that provides environmental consulting, planning, and monitoring services in the U.S., and it has a subsidiary that provides engineering and consulting services to entities around the world interested in developing telecommunications facilities and services. Moreover, COMSAT subsidiaries manufacture and market telecommunications equipment.

The dominance of COMSAT in providing international satellite transmission capacity in the U.S. gives COMSAT unfair advantages over the numerous U.S. companies that are engaged in each of these competitive lines of business since a company engaged in both monopoly and competitive activities has both an incentive and the ability to engage in predatory practices to benefit its competitive enterprises.

The FCC has recognized the unfair advantage that COMSAT possesses over competitors in its competitive businesses, by requiring that COMSAT engage in all competitive activities through subsidiary companies.[12] The FCC keeps tabs on these subsidiaries to make sure that COMSAT does not use its monopoly power in the provision of satellite transmission capacity to disadvantage competitors in its other lines of business. In addition, I introduced legislation during the 98th Congress requiring the FCC to strengthen its oversight of COMSAT to better ensure that the company will not engage in predatory activities.[13]

Since all of this regulatory activity is premised upon the monopoly power that COMSAT holds in the provision of the satellite transmission capacity, these regulatory costs could be avoided if COMSAT faced strong competition in the provision of this service.

CONCLUSION

More than 200 years ago, Adam Smith recognized that, while consumers are the ultimate beneficiaries of a competitive marketplace, they are often denied those benefits for a period of time as a result of hurdles put in the way by those who benefit from an absence of competition:

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> In every country, it always is and must be the intent of the great body of the people to buy whatever they want of those who sell it cheapest. The proposition is so very manifest that it seems ridiculous to take any pains to prove it; nor could it ever be called into question, had not the interested sophistry of merchants and manufacturers confounded the common sense of mankind. Their interest is, in this respect, directly opposite to that of the great body of the people.[14]

Adam Smith described exactly the "interested sophistry" that has prevented the development of competition in transmission facilities for international telecommunications.

However, as in other product lines where interested sophistry delayed the introduction of competition, the provision of transmission facilities for international telecommunications eventually will become a competitive business as well. Pressures are already being applied to eliminate existing entry barriers.

In the meantime, it is essential that government regulators keep close tabs on COMSAT, the sole supplier of transmission facilities, in order to keep its monopoly power within its existing bounds.

REFERENCES

1. Hush-a-Phone Corp. v. U.S., 238 F. 2d 266 (D.C. Cir. 1956).
2. In re Allocation of Frequencies in the Bands Above 890 Mc, 27 F.C.C. 359 (1958), *recon.*, 29 F.C.C. 825 (1960).
3. MCI v. FCC, 561 F. 2d 365 (D.C. Cir. 1977), *cert. denied*, 434 U.S. 1040 (1978).
4. For example, local governments often award franchises to cable television operators granting the franchisee a legal monopoly to provide cable TV service in the franchise area. Similarly, a few State regulatory commissions have issued orders prohibiting entities other than telephone companies from providing certain kinds of local electronic transmission services to the public. *See, e.g.*, Order Instituting Investigation (OII 84-06-113) by California Public Utilities Commission. *See also* Decision and Order in Docket No. 1060 (New Mex. St. Corp. Comm'n, Aug. 6, 1984).
5. For example, several companies offer international telex services (*e.g.*, Western Union International, Inc.; Western Union Telegraph Co.; RCA Global Communications, Inc.; and ITT World Communications, Inc.). As another example, international telephone service in the U.S. is offered by American Telephone and Telegraph Company and MCI Telecommunications Corp.
6. Many electronic transmissions between the U.S. and foreign countries traverse oceanic cables rather than COMSAT satellites. But transmission by oceanic cable is far more expensive than transmission by satellite. Thus cable transmission is not economically competitive with satellite transmission. *See* ITT World Commun., Inc. v. FCC, 725 F. 2d 732, 749 (D.C. Cir. 1984).
7. *See* COMSAT 1983 Annual Report at 33.
8. Note that although COMSAT "provides virtually all international commercial satellite communications to and from the U.S." COMSAT does not use its own satellite system, but rather "COMSAT uses the satellite systems of INTELSAT (the International Telecommunications Satellite Organization) and INMARSAT (the International Maritime Satellite Organization," and that "COMSAT is the U.S. participant in INTELSAT and INMARSAT and currently holds ownership interests in each of these organizations of about 23 percent." COMSAT 1983 Annual Report at 4.
9. Companies that have announced a desire to operate their own satellite systems for transmitting information between the U.S. and foreign countries are: Orion Satellite Corp.; International Satellite, Inc.; RCA American Communications, Inc.; Cygnus Satellite Corp.; and Pan American Satellite Corp.
10. The Communications Act of 1934 prohibits the construction and operation of any device, such as a satellite system, that uses the electromagnetic spectrum unless a license has been obtained from the FCC. *See* 47 U.S.C. §301.
11. *See, e.g.*, "Turf War Blocks Full Agreement on Intelsat Policy," *Broadcasting*, April 2, 1984, at 72; "Baldrige, Shultz Tangle over U.S. Lead in International Telecom Policy," *Inside U.S. Trade*, June 15, 1984, at 3.
12. *See generally* Second Memorandum Opinion and Order in CC Docket No. 80-634, released April 20, 1984.
13. H.R. 5724, 98th Cong., 2d Ses. (1984). This bill has been cosponsored by two Members of the House Subcommittee on Telecommunications, Consumer Protection and Finance, Messrs. Carlos J. Moorhead and Michael G. Oxley. Congressmen Edward J. Markey and John Bryant have introduced another bill that would attempt to reduce COMSAT's ability to engage in predatory conduct because of its substantive involvement in both monopoly and competitive business activities. Unlike my bill, which would deal with this problem by requiring increased FCC oversight, the Markey and Bryant bill would require COMSAT to divest its competitive businesses. *See* H.R. 4464, 98th Cong., 1st Sess. (1983).
14. Adam Smith, The Wealth of Nations (1776) (edited by E. Cannan, 5th ed., London: Methuen & Co., Ltd., 1930, at vol. 1, p. 458).

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Mr. BROYHILL. Thank you very much for inserting the article in the record. I note that you have made some speeches on this recently, and I would like to reciprocate by asking that the record be open to receive a copy of the speech that you made recently on competition in this area.

Mr. WIRTH. Without objection, that will be included in the record at this point as well.

[The speech referred to follows:]

Remarks of
Timothy E. Wirth, Chairman

Subcommittee on Telecommunications,
Consumer Protection and Finance

Before the American Enterprise Institute

March 5, 1985

Thank you very much, and good afternoon.

I'm pleased to be here this afternoon, and glad that AEI is sponsoring this conference. International telecommunications are of immense importance: to our balance of trade, to our foreign policies, and to our future role in the global economy. The Subcommittee I chair has held many hearings on international telecommunications issues, reflecting their importance to our economy.

As we discuss these issues, I'd like to try and put them in perspective. Our experiences in domestic telecommunications provide a useful example.

The United States has embarked on a pro-competitive policy in domestic telecommunications for several reasons.

First, competition will bring more options to the consumer, for less money, than will regulated monopoly.

While we are now in a sometimes confusing transition following the divestiture of AT&T, it is clear that competition is already bringing benefits to the U.S. user.

Second, the pro-competitive policies of the United States are also based on the understanding that technology has altered the regulatory landscape in a manner inconsistent with monopoly, or with extending regulation from basic telephone service to other electronic industries. The distinctions between a telephone and a computer are increasingly impossible to make.

Just as technology made our domestic telecommunications policies obsolete, technological forces are at work in the international marketplace as well. We have seen the development of six generations of satellite technology in the short, 20 year history of the industry.

And just as the technologies involved are dynamic, so also must be our policies.

To remain wedded to policies that are based on yesterday's world is to impose costs on users, suppliers and the economy at large.

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The FCC is now considering five applications to offer international satellite services independent of INTELSAT. The applications have engendered considerable controversy, and have forced a lengthy review of America's policy. The Subcommittee I chair has conducted an in-depth investigation into the policy issues raised by these applications. Let me share some observations which are drawn from our experiences in both the domestic and international arenas.

First, INTELSAT has largely been a success. From its conception in the early days of the Kennedy Administration, INTELSAT has succeeded in creating a global satellite network that serves its members well.

INTELSAT now has 109 member countries. It has brought instantaneous communication to virtually every country in the world, helping to make the world a smaller place. Its inter-connected network has hastened the integration of member countries into the world economy, and has made international telecommunications almost as ubiquitous as the domestic system. INTELSAT is a monument to the peaceful uses of outer space, and to cooperation among nations.

But it is important to understand just who INTELSAT's owners are. They are primarily the Postal, Telephone and Telegraph Administrations of member countries. The satellite network they designed is suited to their needs -- providing point-to-point telecommunications for switched voice and record services.

Thus traffic destined for European distribution is collected at one of three earth stations in the United States, uplinked to the satellite, and received in another country. At that point, the message transits the domestic network of the receiving country, and ultimately arrives at its destination.

The facilities of INTELSAT have served this market well. Moreover, by virtue of satellite technology, thin routes and high density routes can be served over the same facility. Transmissions are virtually distance-insensitive.

But there are other markets, distinct from the switched voice market, that lend themselves to satellite technology. These can be characterized as point-to-multi-point, or multi-point-to-multi-point. We can identify some of these other markets -- for example, the video market. And the video market provides a good example of the way changes in satellite policy can help to bring new products and services to the public. Let me explain.

Until 1972, the FCC regulated the ownership and construction of satellite earth stations, even if the earth station could only receive a signal. In 1972, however, the FCC adopted its so-called 'open-skies' policy, which deregulated receive-only earth stations. No one was quite sure what benefits would result from the new policy,

but the FCC took a chance and let marketplace forces work.

And the marketplace did work. Programmers for cable systems quickly realized that satellites offered an inexpensive alternative to terrestrial transmission facilities. With a single uplink signal, a programmer could reach virtually every cable system in the country, at nominal cost.

The result was the inauguration of services like HBO. And with the advent of premium channels on cable systems, the cable industry has grown at a rapid pace. While basic cable services -- the retransmission of over-the-air broadcast signals -- have been in existence since the early 50's, it was the availability of premium services that has fueled the explosive growth of cable in the last ten years.

***

INTELSAT does not now serve the video marketplace in a meaningful fashion. The few video transponders that are available are pre-emptible, they must be reserved far in advance, and they are extremely expensive.

Moreover, the INTELSAT tariffs include additional charges for additional receiving points, reflecting the fact that INTELSAT was designed to meet the needs of its owners -- the PTT administrations.

The applications currently under consideration by the FCC propose to serve the video market. They will make facilities available that will facilitate the export of U.S. programming.

As an aside, most European nations are several years behind the U.S. in the development of cable systems. Great Britain is only now constructing cable systems -- many other countries are barely cabled, or not cabled at all. The dearth of programming material that has traditionally concerned the U.S. cable industry will also become a concern of European cable operators. In short, there is a market under construction, which the alternative satellite systems could enable U.S. programmers to fill.

***

What are the U.S. options? If we are to take advantage of the development of non-traditional applications of satellite technology, what is the appropriate course to pursue?

It seems to me that our options are threefold.

First, we could rely upon INTELSAT, and try to encourage INTELSAT to fulfill these new needs as well as its obligations to the public switched network.

Second, we could protect INTELSAT's switched services from competition, but allow alternative systems for other applications.

Or finally, we could pursue competition with ideological fervor, and permit alternative satellite systems to compete directly with INTELSAT.

As Americans, I believe we have a predisposition towards competition. We know that competition encourages innovation, lower prices, and a greater level of responsiveness to the market. Moreover, we already have alternative systems providing international satellite service -- most notably, the INMARSAT system -- which connects ships at sea to the public switched networks of the world.

And asking INTELSAT to be all things to all people is not fair -- particularly to those from under-developed nations. The new applications for satellite transmissions -- video, high speed data -- will, in all likelihood, only be utilized by developed countries. Forcing INTELSAT to meet the needs of a few of its members -- while incurring costs for each member country -- is unfair. The Third World should not be forced to underwrite the cost of video distribution between the United States and Europe. Thus, I do not believe that the first option is realistic for the United States.

The third option -- of permitting unrestricted competition to INTELSAT for all services -- is equally unrealistic. To do so would constitute an abrogation of our obligations under the INTELSAT Agreements. Unrestricted competition would deny us the benefits of a globally inter-connected system for switched services. And such a policy would offend our partners in INTELSAT.

The second option, of permitting competition for some services, while protecting INTELSAT's switched traffic, is far more reasonable. It has the virtue of maintaing the good things that INTELSAT has brought -- cooperation, interconnectivity, and access to every corner of the world.

But this option will also permit the development of new applications of satellite technology, without imposing the costs of the new applications on those who do not use them. Reliance on market forces for the offering of non-traditional services is consistent with our own tradition of free enterprise, and will facilitate greater responsiveness to the marketplace.

We have already seen INTELSAT respond to the threat of competition. Just two weeks ago, Ted Turner announced an agreement to export his Cable News Network to Europe, over INTELSAT. INTELSAT now offers a new data service -- International Business Satellite Services. I would expect to see additional innovation on the part of INTELSAT in the future, proving the maxim that competition brings users new services.

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Protecting INTELSAT's switched services, while permitting alternative systems for customized services, is sound

telecommunications policy. But international telecommunications are, by their nature, joint undertakings. And INTELSAT, in particular, represents both a telecommunications and a foreign policy success.

There are foreign policy ramifications to this issue, which I'd like to address as well. Those ramifications have both substantive and political dimensions, which must be separated.

On a substantive basis, there is legitimate concern that fragmenting INTELSAT's traffic will cause INTELSAT economic harm. It seems to me that, by limiting alternative systems to customized services, and prohibiting them from offering switched service, INTELSAT's primary mission will be safeguarded. We're not talking about 'cream skimming' here, in which the most lucrative traffic is diverted from INTELSAT.

Rather, we are opening up to competition a new market, currently un-served or under-served -- and making sure that those who use the new services are the ones who pay for them.

The political dimension is, however, another story. For a variety of reasons, and by a variety of players, the members of INTELSAT have been told that the decision to permit alternative systems represents a movement away from a single global system for the provision of switched service.

Nothing could be further from the truth.

Those member countries must be presented with a detailed explanation of U.S. policy, the safeguards that will be employed to protect INTELSAT, and, most importantly, the rationale behind the policy to permit alternative systems.

That job has not been done.

And the absence of that explanation has created a situation in which a foreign policy problem can develop, if it hasn't already.

There are, I think, two primary reasons for the confusion that exists around the world about the direction U.S. policy is taking.

The first is a function of confusion within our own Government.

While I won't spend a great deal of time on this, there are two Executive Branch departments that have primary responsibility over international telecommunications policy: the Department of Commerce and the Department of State.

Explaining U.S. policy developments to other Governments ought to be the responsibility of State. As far as I'm aware, State has not made the necessary effort to do so, until very recently.

Instead, we have seen a 'turf war', in which the responsibilities of each Department are blurred, as each attempts to expand its

authority.

Last year, State and Commerce signed a 'Memorandum of Understanding', attempting to delineate the respective responsibilities of each Department. Yet there are disturbing signs that the turf fight continues unabated.

The Telecommunications Subcommittee that I chair will continue to oversee the formulation and implementation of international telecommunications policy. It should be clear that the focus of the Commerce Department should be telecommunications policy, and that of the State Department, foreign policy.

To the extent that the lack of clarity in the responsibilities of each Department continues to create problems, the Subcommittee will be forced to legislate an appropriate delineation.

The other factor that has confused the rest of the world is the FCC, and its role in the current dispute.

The Commission has published a 'Notice of Inquiry/Notice of Proposed Rule Making' which is less than clear. In its notice, the Commission raised the possibility of re-interpreting an Executive Agreement.

It suggests that the proposed alternative systems may be permitted to compete directly with INTELSAT. In short, it virtually ignores the recommendations of the President and the Executive Branch, and starts de novo.

Under the appropriate statutes, the procedure is relatively clear. The President has the authority, under the Communications Satellite Act, to make a 'National Interest' determination that alternative satellite systems should be permitted.

The FCC -- operating under the 'Public Interest' standard of the Communications Act, must examine the various applications, measure them against the President's 'National Interest' criteria, and reject or grant them on that basis.

The Commission should not be in the position of making foreign policy, nor of interpreting what amounts to American treaty obligations.

To the extent that the FCC goes beyond the Executive Branch recommendations, they will, of course, hear from the Congress.

Moreover, since it is the State Department that must coordinate the proposed alternative systems with INTELSAT, any excesses on the part of the FCC will not become U.S. policy.

I do not believe that the proposed alternative systems pose substantive problems for the United States and its relationship with the other members of INTELSAT. But the manner in which the United

States has addressed the issue may well have created a political problem.

The State Department must undertake an aggressive effort to explain the policy to our partners in INTELSAT. It must reassure them that the limited authorizations proposed by the President will not have an adverse economic impact on INTELSAT, and do not represent a diminution of America's commitment to INTELSAT.

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One subsidiary question that has been raised in this debate is whether INTELSAT ought to be allowed to compete with the alternative systems.

It seems to me a more competitive INTELSAT could bring many advantages -- to the United States and to the rest of the world.

However, as we address this question, it seems to me that there are two principles that ought to govern the resolution of the debate:

** First, there should be no cross-subsidies. INTELSAT should not be permitted to use its protected position in the switched market to underwrite the cost of entering the new markets.

** Second, those who benefit from INTELSAT's competing should be the ones to pay for it. Less Developed Countries (LDCs) -- which will not be utilizing high speed data links, nor 24-hour video transponders -- should not be forced to pay for their construction, launch and operation.

The United States -- together with its partners in INTELSAT -- should begin the process of defining the future role of INTELSAT in these newly competitive markets. If there is a consensus that INTELSAT should be permitted to compete, we should attempt to define the manner of that competition, consistent with the two principles I outlined earlier. This effort should help to reassure INTELSAT and its member countries that the United States has a strong interest in seeing INTELSAT prosper, and will continue to work to achieve that goal.

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We are only at the beginning of this process. The detailed recommendations from the Executive Branch are barely a month old. The Telecommunications Subcommittee will be examining those recommendations in the coming weeks, and we will hold hearings on them early in April.

As we examine these issues, it is important to keep several things in mind:

First, the technology that has made INTELSAT possible is not static. There have been tremendous advances over the past 20 years.

As the technologies involved have changed, so also should the policies of the United States. By permitting alternative systems to make facilities available for un-served, or under-served markets, those who depend on satellite transmission will be better off.

Second, unless we continue in the direction of alternative systems, there will be serious opportunity costs. New export markets will remain undeveloped. At a time when our balance of trade is approaching crisis proportions, those opportunity costs are significant and growing.

Finally, we should remember that INTELSAT has been good for the United States, and good for the rest of the world. We should attempt to build on that base as we permit new applications of satellite technology, and make sure that our partners are kept well aware of our on-going commitment to the INTELSAT system.

We have all benefitted from the first 20 years of satellite technology. If we are careful in the development and explanation of U.S. international telecommunications policies, we can guarantee that the next 20 years will be equally beneficial.

Thank you very much.

Mr. WIRTH. You are familiar with the rules of the subcommittee. You have been here before, Mr. Schneider. We are pleased to have you back. We appreciate your interest and concern.

If you could summarize your testimony in 5 minutes, I think we are probably familiar with the general positions you have. The members of the subcommittee are very interested in the issues and have lots of questions. The faster we can get to those, the better off we will be.

Without objection, your testimony will be inserted in full in the record.

Chairman Fowler, maybe we can start with you, and move then to Mr. Schneider, and then finally to Mr. Markey.

Thank you for being with us.

STATEMENTS OF MARK S. FOWLER, CHAIRMAN, FEDERAL COMMUNICATIONS COMMISSION; WILLIAM SCHNEIDER, JR., UNDER SECRETARY OF STATE FOR SECURITY ASSISTANCE, SCIENCE, AND TECHNOLOGY, DEPARTMENT OF STATE; AND DAVID J. MARKEY, ASSISTANT SECRETARY FOR COMMUNICATIONS AND INFORMATION, DEPARTMENT OF COMMERCE

Mr. FOWLER. I appreciate being able to discuss this issue with you. I would like to summarize my full written statement, Mr. Chairman.

As you know, we have pending before the agency five applications to construct and operate private international satellite systems, apart from Intelsat. These five applications present the Commission with the specific question of whether the public interest would be served by licensing these proposed systems.

The broader question is whether the United States should continue to rely almost exclusively on Intelsat for its future international communications satellite needs, or whether it should look elsewhere to satisfy some of those needs, without harming the system that has served us so well.

The resolution of these question must involve the Congress and the executive branch because they raise matters that are beyond the scope of the Commission's regulatory authority. We must together develop a policy that will ensure that future U.S. needs are provided for and that the U.S. continues to satisfy its international obligations.

Therefore, the Commission has attempted, first of all, to fashion procedures for regulatory consideration of the applications, both to complement congressional and executive branch review and avoid any unnecessary regulatory delay on the part of the Commission.

In my testimony today, I will not discuss the merits of any particular application, since the Commission has neither determined whether the applications should be granted, nor completed its current proceeding to develop a policy for regulatory review of these applications.

I will attempt to explain the Commission's role in this matter and the issues that it is considering in its current proceeding, because the applications raise not only telecommunications concerns, but also foreign policy, trade, and national security questions which are within the province of the executive branch. The Com-

mission withheld action on these applications until the executive branch reviewed these other questions. That review culminated in the President's November 28, 1984 determination that separate satellite systems are required in the national interest.

Also in November, the Departments of State and Commerce issued a joint letter informing the Commission of the criteria necessary to ensure U.S. fulfillment of its international obligations, as well as furtherance of telecommunications and foreign policy interests.

The Commission has issued a notice of inquiry and proposed rulemaking on the establishment of separate satellite systems. Comments were due on April 1, 1985 and reply comments on June 5, 1985. The purpose of the notice is to develop as complete a record as possible for the Commission to establish policy guidelines for regulatory consideration of the applications.

Among other issues, the notice requests comments on the executive branch decision. The Commission's interest in obtaining comments on the executive branch decision is limited to the regulatory implications of that decision.

The executive branch believes that economic harm to Intelsat from the proposed separate systems can be avoided, if competition is restricted to customized services such as intracorporate networks. Competition would be limited by restricting separate systems to providing services through the sale or long-term lease of transponders or segment capacity for systems not interconnected with public switched message networks.

The Commission must look at the potential economic effect of the proposed systems on Intelsat. In its notice, the Commission requests comments as to the appropriate criteria for determining economic harm and if that harm would constitute significant economic harm under Intelsat's charter.

The notice requests information on potential diversion of traffic for Intelsat by the proposed systems, including how the level of potential traffic diversion will be affected by restricting the proposed systems to customized services; two, the resulting revenue impact on Intelsat, and three, the options available to Intelsat to respond competitively to the new systems.

While the potential economic effect on Intelsat is important and must be considered under the requirements of the Intelsat charter, we also must not lose sight of our obligation to weigh this effect against potential benefits to the American consumer that may be provided by these proposed private systems.

We intend to consider this question in our proceeding, as well as other matters such as the effect private systems may have on existing service providers and the satellite equipment industry.

In sum, we can all agree that the proposed private systems raise significant policy issues. The Commission faces a formidable task in analyzing the information and data that it expects to receive in response to its notice. We intend to consider these issues carefully before we take action.

We must first adopt policy guidelines for regulatory consideration of the applications. Based on the guidelines adopted, any favorable action would only be an initial conditional authorization, pending completion of the required Intelsat consultation process.

During that process, the Commission would assist the Department of State in preparing documents that are required to begin the consultation process and provide Congress with any information and assistance it may need to investigate this matter.

Mr. Chairman, that completes my prepared statement. Thank you.

[Mr. Fowler's prepared statement follows:]

PREPARED STATEMENT OF MARK S. FOWLER

Mr. Chairman and members of the subcommittee, I appreciate the opportunity to discuss international telecommunications with you, particularly new international satellite systems. With me today is Bert Halprin, chief of the FCC Common Carrier Bureau.

As you know, pending before the Commission are five applications to construct and operate private international satellite systems apart from the Intelsat system. The first application was filed in March, 1983 and the last in May, 1984. Petitions to deny and numerous other pleadings, studies, informal statements and letters have been filed in response to the applications.

Four of the proposed systems would provide service between the United States and Western Europe. One would provide service to South America. All applicants would sell or lease transponders on a non-tariffed basis; two would also provide tariffed common carrier services. A variety of analog and digital communications services would be available from the systems depending on specific customer needs. Proposed services include data collection and distribution, teleconferencing, high-speed facsimile, computer-to-computer communications, remote printing, teletext, videotext, and television and radio distribution.

The Hallmark of the applicants' proposals is flexibility in meeting varied customer transmission requirements. The applicants contend that the lease or purchase of bulk transmission capacity in their proposed systems would provide users with the same advantages that are available through lease or purchase of domestic satellite capacity on a non-tariffed basis. Some of these advantages have included (1) tailored and flexible arrangements with customers not possible under the regimen of a tariffed service offering, (2) customer ability to make long-term plans for the use of facilities with assurance as to availability and price, (3) systems specifically designed to meet customer needs and (4) positive market development with new and innovative service offerings.

The applications and responsive pleadings raise important issues which we all agree require careful consideration. The specific question presented to the Commission is whether the public interest would be served by licensing the proposed systems. The broader question posed to Congress, as well as the Commission and other agencies responsible for the development of U.S. telecommunications policy, is whether the United States should continue to rely almost exclusively on Intelsat for its future international communications satellite needs or whether it should look elsewhere to satisfy some of those needs without harming the system that has served us so well. The resolution of these questions must involve the Congress and the executive branch because they raise matters that beyond the scope of the Commission's regulatory authority. We must together develop a policy that will assure that future U.S. needs are provided while the United States continues to satisfy its international obligations. Therefore, the Commission has attempted to fashion procedures for regulatory consideration of the applications both to complement congressional and executive branch review and avoid any unnecessary regulatory delay on the part of the Commission.

In my testimony today, I will not discuss the merits of the applications since the commission has neither determined whether they should be granted nor completed its current proceeding to develop a policy for regulatory review of them. However, I will attempt to explain the Commission's role in this matter and the issues that it is considering in its current proceeding.

Besides telecommunications concerns, the applications raise foreign policy, trade and national security questions which are beyond the authority of the Commission and within the province of the executive branch. Because of this, and at the specific request of the Departments of State and Commerce, the Commission withheld action on the applications until the executive branch reviewed the national security and foreign policy aspects of the applications. That review culminated in the President's November 28, 1984, determination that separate satellite systems are required in the national interest, and in a joint Department of State and Commerce

letter of the same date informing the Commission of the criteria necessary to ensure U.S. fulfillment of its international obligations and furtherance of both its telecommunications and foreign policy interests.

Following the President's determination and the executive branch statement of criteria, the Commission issued a notice of inquiry and proposed rulemaking on the establishment of separate satellite systems. Comments were due on April 1, 1985 and reply comments on June 5, 1985. The purpose of the notice is to develop as complete a record as possible for the Commission to establish policy guidelines for regulatory consideration of the applications. The notice outlines the issues raised by the applications and requests information and data to assist the Commission in resolving these issues. It also requests comments on the executive branch decision.

The Commission was not in a position to set out the executive branch decision as its proposed policy because, at the time that we issued the notice, the executive branch white paper which provides the basis for its decision has not been provided to the Commission. The Commission believed that adopting the executive branch decision as its own without first reviewing the basis for it and public comment on it would be inconsistent with the Commission's status as an independent regulatory agency.

However, while we believe that public comment on the executive branch decision is necessary, the Commission is not attempting and will not attempt to usurp executive branch authority in foreign policy, trade and national security matters. The Commission's interest in obtaining comments on the executive branch decision is limited to the regulatory implications of the decision. The executive branch believes that economic harm to Intelsat from the proposed separate systems can be avoided if competition is restricted to "customized" services. According to the executive branch white paper, customized services would include intra-corporate networks and television transmission. Competition would be limited by restricting separate systems to providing services through the sale or long-term lease of transponders or space segment capacity for communications not interconnected with public-switched message networks.

The Commission must take a broad look at the potential economic effect of the proposed systems on Intelsat. This is an important consideration because the Intelsat charter requires any member intending to use space segment capacity separate from Intelsat facilities in order to meet international public telecommunications requirements to first consult with Intelsat to ensure technical capability with Intelsat facilities and to avoid significant economic harm to the global system. In its notice, the Commission requests comments as to the appropriate criteria for determining economic harm and if that harm would constitute "significant economic harm" under Intelsat's charter. In addition, the notice requests information on (1) the potential diversion of traffic from Intelsat by the proposed systems, (2) the resulting revenue impact on Intelsat and (3) the options available to Intelsat to respond competitively to the new systems.

As part of its analysis, the Commission is comparing Intelsat services to the applicants' proposed services. The applicants believe that their systems would provide services different from Intelsat services. Some argue that their systems would complement Intelsat and actually stimulate overall demand for international satellite services to Intelsat's benefit. However, if the new systems are to offer services that are substantially equivalent to Intelsat's, there is a potential for traffic diversion. Therefore, the Commission has requested information and comments on the extent of potential traffic diversion. In addition, the Commission is looking at how the level of potential traffic diversion will be affected by restricting the proposed systems to customized services. We also must consider the enforceability of such a restriction from both the legal and technical aspects. And, we must consider what options may be available to Intelsat to avoid significant economic harm through competitive responses, such as greater pricing flexibility, or by reduction in costs. Finally, the Commission has requested comments on the feasibility of direct access in the environment that would be created by separate satellite systems.

While the potential economic effect on Intelsat is important and must be considered under the requirements of the Intelsat charter, we must not lose sight of our obligation to weigh this effect against potential benefits to the American consumer that may be provided by the proposed private systems. We intend to consider this question in the proceeding that we have initiated as well as consider other matters such as the effect private systems may have on existing service providers and the satellite equipment industry.

In sum, we can all agree that the proposed private systems raise significant policy issues. The Commission faces a formidable task in analyzing the information and data that it expects to receive in response to its notice. We intend to consider these

issues carefully before we take any action. The Commission must first adopt policy guidelines for regulatory consideration of the applications. Based on the guidelines adopted, any favorable action on one of the applications would be initial and not final. Initial Commission action would take the form of a conditional authorization. Consultation procedures with Intelsat by the United States and one or more foreign authorities willing to authorize use of the proposed systems for service to their countries would have to be completed before the Commission would issue a license to the applicant. The Commission would assist the Department of State in preparing documents that are required to begin the consultation process. The Commission would not consider final action on the applications until the Intelsat consultation process is completed. During this process, we would provide Congress with any information and assistance it may need in its investigation of this matter.

This completes my prepared statement. I would now be pleased to answer the subcommittee's questions.

Mr. WIRTH. Thank you very much for being here.

Mr. Schneider.

STATEMENT OF WILLIAM SCHNEIDER, JR.

Mr. SCHNEIDER. I thank you for this opportunity to appear before the subcommittee, and I did enjoy my last appearance here.

I would like to summarize my statement briefly with respect to the views of the Department on the question of communications satellite systems separate from Intelsat, and I am privileged to join with Mr. Markey in presenting the views of the executive branch as a whole.

Despite the finding that the systems are required in the national interest, the determination is not in and of itself an authorization for any particular applicant to construct facilities or offer services. It is the role of the FCC to give such authorization.

It must determine whether the services proposed by the individual applications are in the public interest, convenience, and necessity.

The executive branch criteria provided to the FCC by the Secretaries of State and Commerce are safeguards designed to limit the economic impact of any new American systems on Intelsat. We are the only country that has placed such restrictions on its own systems in order to protect Intelsat. Other satellite systems have not taken steps to limit competition with Intelsat regarding the important public switched message networks. They have approved these other separate systems, but they have singled out the proposed U.S. systems for criticism.

I would like to reiterate a commitment that many people have tried to obscure. The U.S. Government, this administration, the Congress, and the business community are proud of the U.S. contributions to the success of Intelsat. Support for Intelsat remains the cornerstone of our international telecommunications policy. It is in our national interest that Intelsat should remain a key element in expanding international global telecommunications satellite systems.

The debate over separate systems should not be seen as a reference on Intelsat's future. The question that we have to ask ourselves is not whether to permit competition with Intelsat, but how to best preserve the features of Intelsat in a rapidly changing world.

International communications services constitute an essential component of international trade today. Efficient and low-cost

international communication links are an essential element of international finance to facilitate the production and shipment of goods and to manage U.S. offshore operations of its own investments.

There have been some questions about the kinds of services these new companies would offer. All of the services options currently being discussed deal either with video distribution or fully interconnected intracorporate networks operating from customer premises. None of them would compete with public switched network traffic, which makes up more than 80 percent of Intelsat's revenues.

But the individual services were not the basis upon which the senior interagency group made its recommendation to the President to allow competition. That was based on the belief that competition is the most efficient way of making the widest range of services available to customers at the lowest possible prices and should be permitted, given adequate safeguards for Intelsat's viability.

Most of the services that the companies plan to offer involve combinations of satellite positioning, frequency of use, and customer convenience in innovative ways. Intelsat has the experience and aggressive leadership required to compete in open markets and has established systems and customers well acquainted with its quality of service and proven track record of meeting the service demands through forward planning and sound fiscal management.

There has been some discussion of Intelsat's pricing flexibility. In the opinion of Intelsat's legal advice, the organization has a great deal of flexibility. The Board of Governors has significant flexibility in determining the extent of cost recovery for each type of utilization and in defining the type of utilization for which different charges may be set.

A type of utilization may be defined on the basis of a wide range of operational parameters, but not on the basis of who the users are or on a geographic basis.

We continue our longstanding efforts to keep the members of Intelsat briefed on our actions. The Department of State launched a major effort to meet bilaterally with our major allies to discuss communication issues, including the United Kingdom, the Federal Republic of Germany, the Netherlands, Canada, Mexico, Japan, and later this month with Italy and the Vatican.

Representatives of the Department have met with their counterparts in France, Spain, Brazil, Argentina, Chile, and most of the nations of the Caribbean. Separate satellite systems have been a prominent topic in all of these meetings.

In addition, at a meeting of the ITU, the assembly of parties to Intelsat, we have worked strenuously to make our story known. In the formal sessions, we have put our views on record. Through our embassies, all Intelsat member countries have been provided copies of the determination, the letter to the FCC, a list of questions and answers, and a letter explaining the issue in detail and the recently published executive branch white paper.

In Washington, the Department distributed the same material to all Intelsat member countries' embassies with a diplomatic note offering to brief interested representatives.

We expect that other governments will be in a position to have meaningful discussions on separate systems, once the FCC has acted and when a specific proposal, including the identification of a foreign partner or partners, is presented.

The vitality of Intelsat in the longer term will depend on its ability to effectively and with economic efficiency serve a portion of the international communication market. Fiber optics may well offer very significant competition to Intelsat. It is necessary that Intelsat optimize its economic efficiency and take full advantage of its unique qualities to ensure its long-term viability.

The current potential competition from the U.S. applicants' separate systems has already stimulated Intelsat. It is important that the parties and the signatories of Intelsat give careful consideration to the future business of Intelsat.

I have attempted to cover a few of the issues concerning separate systems, Mr. Chairman, and would be delighted at the appropriate time to respond to questions you may have.

[Mr. Schneider's prepared statement follows:]

Statement of

William Schneider, Jr.
Under Secretary of State for
Security Assistance, Science and Technology

Mr. Chairman, Ladies and Gentlemen:

Thank you for affording me an opportunity to present the views of the Executive Branch on the subject of communications satellite systems separate from INTELSAT.

There has been a great deal of confusion about the nature, timing and purpose of the Presidential Determination. I hope to be able to further clarify some of it here today.

Since 1983, Orion Satellite Corporation, International Satellite, Inc., Cygnus Corporation and RCA American Communications have had applications pending before the FCC to provide trans-Atlantic satellite communications services. In addition, Pan American Satellite Corporation has proposed to establish a system which would serve Latin America.

Under the terms of the Communications Satellite Act of 1962, such additional communications satellite systems separate from INTELSAT, could be established if the President determined they were required in the national interest.

The Senior Interagency Group on International Communication and Information Policy reviewed U.S. international satellite policy to determine whether, and under what conditions, authorizing satellite systems and services in addition to INTELSAT would be: (a) consistent with prevailing U.S. law, practice, and international treaty obligations; (b) in the U.S. national interest; and, (c) compatible with sound foreign policy and telecommunications policy goals.

After a thorough study of the issue, the Secretaries of State and Commerce, on behalf of the 13 other members of the SIG, submitted the Executive Branch recommendation to the President. On November 28, 1984, the President issued a Determination that separate systems are in the national interest.

Despite the finding that the systems are "required in the national interest," the Determination is not, in and of itself, an authorization for any particular applicant to construct facilities or offer services. It is the role of the FCC to give such authorization. It must determine whether the services proposed by the individual applications are in the public interest, convenience and necessity.

CONDITIONS FOR COMPETITION

Mindful of U.S. obligations under the INTELSAT Agreement, and in keeping with our desire to preserve INTELSAT's vitality, the President instructed the Secretaries of State and Commerce to advise the FCC of criteria that would be necessary to assure that the U.S. would continue to meet its obligations. Those criteria were contained in a joint State-Commerce letter to the FCC. There are two conditions:

1) each system is to be restricted to providing services through the sale or long-term lease of transponders or space segment capacity for communications not interconnected with public-switched message networks (except for emergency restoration service); and

2) one or more foreign authorities are to authorize use of each system and enter into consultation procedures with the United States Party under Article XIV (d) of the INTELSAT Agreement to ensure technical compatibility and to avoid significant economic harm.

The Executive Branch criteria are safeguards designed to limit the economic impact of any new American systems on INTELSAT. We are the only country that has placed such strict restrictions on its own systems to protect INTELSAT. Members of other international satellite systems have not taken steps to limit competition with INTELSAT as regards the highly important public switched message networks. The INTELSAT Board of Governors and Assembly of Parties have approved these other separate systems, and yet now these bodies have singled out the proposed U.S. systems for criticism.

We perceive a double standard being applied. If new separate systems, American or otherwise, cause significant economic harm to INTELSAT they should not be authorized. These systems should should not be prejudged by their nationality or the market they intend to serve. Based on specific proposals, and taking into account the advice of the Board of Governors, the Assembly of Parties shall express its findings in the form of recommendations. The United States Government will carefully consider all recommendations and will proceed with systems it deems consistent with its obligations to INTELSAT.

The issue now is before the FCC for its action on the applications. If the FCC grants initial approval, the applicants may seek markets for their services. If they are successful and receive approval for operations from another

country, we will then join with that country (or countries) in consulting with INTELSAT under the terms of the Agreement. We believe that we have charted a course that will allow the evolution, "in conjunction and in cooperation with other countries, as expeditiously as practicable [of] a commercial communications satellite system, as part of an improved global communications network, which will be responsive to public needs and national objectives, which will serve the communications needs of the United States and other countries."

That language is taken from the Declaration of Policy and Purpose of the Communications Communications Act of 1962.

U.S. COMMITTMENT TO INTELSAT

Before commenting on a few current issues concerning separate systems, I would like to reiterate a committment that many people have tried to obscure: the United States Government, this Administration, the Congress, and all the businesspeople I have talked to, are proud of the U.S. contribution to the success of INTELSAT. Support for INTELSAT remains the cornerstone of our international telecommunications policy. It is in our national interest that INTELSAT should remain a key element in an expanding international global telecommunications satellite system.

WHY SEPARATE SYSTEMS?

The debate over separate systems should not be seen as a referendum on INTELSAT's future. The question we have to ask ourselves is not whether to permit competition with INTELSAT, but how to preserve the best features of INTELSAT in a rapidly changing world. International communications services constitute an essential component of international trade today. Efficient and low-cost international communications links are an essential element of international finance, to facilitate the production and shipment of goods, and to manage U.S. off-shore operations, assets, and investments. Good communications facilities are also critical to the continued development of U.S. trade in services, which exceeded $40 billion in 1982.

In a recent article in the Washington Post, Mr. Markey cited some interesting figures. Currently, he said, it costs a minimum of more than $2,700 an hour to transmit television programming from New York to London using the facilities of AT&T, Comsat, INTELSAT and British Telecom. In the United States such service can be provided over a comparable distance

for $790. Similarly, the least costly international private line service between New York and London now sells for about $3,700 a month, while comparable service between New York and Los Angeles on a domestic satellite cost as little as $1,150 a month.

Those large price differentials translate directly into reduced competitiveness for American companies. The question is not whether INTELSAT has been successful in bringing down costs over time, but whether for certain situations employing customized services, private companies could not do even better. Competition has served this nation well. We believe that private companies should be given a chance in this instance as well.

SERVICES

There has been some question about the kind of services these new companies would offer. All of the service options being talked about deal with either video distribution or fully interconnected, intracorporate networks operating from customer premises. None of them would compete with the public-switched network traffic that makes up more than 80% of INTELSAT's revenues. But the individual services were not the basis on which the SIG made its recommendation to allow competition. That was based on the belief that competition is the most efficient way of making the widest range of services available to consumers at the lowest possible prices, and should be permitted, given adequate safeguards for INTELSAT's viability. Most of the services that these companies plan to offer involve combinations of satellite positioning, frequency use and customer convenience in innovative ways.

One example is, small, customer-premises antennas linked to a single satellite covering the entire continental United States and Western Europe, thereby eliminating terrestrial and sometimes domestic satellite links that add to the cost and decrease reliability. One company plans to offer intra-corporate data links much like the INTELSAT Business Service. It will provide the same basic service in a new format and, in some cases, more directly and, they claim, at reduced cost. In many places INTELSAT services are only available over 30 meter C-band earth stations and terrestrial links. ISI claims, for example, that none of the satellite deployment plans approved by the INTELSAT Board of Governors would provide city center service to such major American cities as Houston, Miami, New Orleans, Seattle.

REGIONAL AND SPECIALIZED SEPARATE SYSTEMS

INTELSAT is certainly the premier international commercial communications satellite system, but its members have shown that they do not believe it should be the only one. International systems already abound and more are contemplated. Eutelsat continues to grow; Palapa, originally conceived as a national system, now serves Indonesia and its neighbors; Arabsat is about to become a reality; the Andean nations are exploring the possibility of launching a system of their own, as is the Pan African Telecommunications Organization. Even Papua New Guinea has a system on the drawing boards which, to be economically viable, will have to be converted into an international system, competing with INTELSAT, to survive. The owners of these competing systems are all INTELSAT members.

When new services are suggested that can be met within the existing or planned equipment in the INTELSAT system, INTELSAT has a significant competitive advantage. Where new services are not part or wholly outside the current capability of INTELSAT, INTELSAT may wish to invest its resources in expanding its capability to offer these new services and thereby compete with others. Or INTELSAT may choose not to make such investment and maintain the focus of its efforts on its existing services. But it is important that such new services be permitted to be tested under open market conditions. Expanding markets through the efforts of entrepreneurs is one of the principal characteristics of growth in the American economy and its benefits to the advancement of international communications should be fully utilized. While the current international communications market is expanding at a significant rate, it is clear that new entrants offering new services and competing services will further increase the growth rate of this market.

INTELSAT has the experience and the aggressive leadership required to compete in open markets. It has the added advantage of established systems and customers who are well acquainted with its quality service and its proven track record of meeting new service demands through forward planning and sound fiscal management.

COMPETITION BEYOND SEPARATE SYSTEMS

It can be argued that the traffic diverted from INTELSAT by these existing international systems is minor. But that is not the point. The heart of the matter is that for one reason or

another nations have found it necessary to set up satellite systems outside of INTELSAT. Every system is a harbinger of the future that we must not ignore. The times are changing, and what worked well yesterday will not necessarily serve us as well tomorrow.

Because we recognize our obligation to the INTELSAT system we have imposed strict conditions on competing satellite systems. But these conditions will not protect INTELSAT forever. The members of INTELSAT need to develop a strategy that will allow the organization to continue to be a vital link in the global telecommunications system.

However, time for such consideration is growing short. The first trans-Atlantic fiber optic cable will become operational in 1988. Trans-Pacific cables will soon follow. Another private trans-Atlantic fiber optic cable, with enormous capacity, has already received tentative approval from the FCC. An application for another private system is under consideration.

The wide band-width and high capacity of fiber optics systems make them ideal for the transmission of data and video, two of the most likely areas of future growth . In short, they are attractive alternatives to satellite systems. Moreover, fiber optics will allow international communications to grow tremendously without further congesting the frequencies already used for satellite and radio communications.

Beyond the existing separate systems and fiber optic cables, no one really knows where further competition will come from. The ability of any single provider of services to predict what the market will look like even two or three years hence has not been very good. The most practical answer is to permit the open market place to test new technologies and services. Through competition the customer selects his needed services at affordable prices.

PRICING FLEXIBILITY

INTELSAT's ability to compete must be evaluated on criteria that go far beyond simply pricing flexibility in its narrow meaning. Additional criteria include: product differentiation, quality of service, track record and expertise, accumulated "good will," support facilities, market position and strength, and economies of scale or scope. On all of these points INTELSAT is a formidable competitor.

Even on the narrow issue of pricing flexibility, INTELSAT appers to have a good deal of leeway.

Article VII of the INTELSAT Operating Agreement requires that space segment utilization charges "shall have the objective of covering the operating, maintenance and administrative costs of INTELSAT, the provision of such operating funds as the Board of Governors may determine to be necessary, the amortization of investment made by Signatories in INTELSAT and compensation for use of the capital of Signatories."

Article V(d) of the Agreement states that "... The rates of space segment utilization charge for each type of utilization shall be the same for all applicants for space segment capacity for that type of utilization." This provides the guiding principle for establishing charges based on utilization. It means, essentially, that once a particular service has been defined on the basis of operational parameters, prices charged for that service will be the same for all users served. Thus thin-route customers pay the same for a specific INTELSAT service as customers on heavily-used routes.

In essence then, there are two basic requirements regarding INTELSAT's charging practices. First, the same price shall be charged for the same type of space segment utilization, and second, prices charged (and revenues generated) must cover costs and an appropriate return on capital.

In the opinion of INTELSAT's Legal Advisor, the organization has a great deal of flexibility. In a memorandum entitled "Determination of INTELSAT Space Segment Utilization Charges," he stated that "in establishing utilization charges, the Board of Governors has significant flexibility in determining the extent of cost recovery for each type of utilization and in defining types of utilization for which different charges may be set. A type of utilization may be defined on the basis of a wide range of operational parameters, (including technical elements, role of the satellite to be used, the degree of protection given, etc.), but not on the basis of who the users are, i.e., on an individual link basis or on a geographic basis." We concur with this conclusion.

LEAKAGE INTO THE PUBLIC-SWITCHED NETWORKS

One complaint against the Determination is that it depends for its success on a restriction -- no connection to the public-switched networks -- that is inherently unenforceable. We don't accept that assertion. While it is certainly possible

that some leakage into the networks may occur, experience with the federal government's FTS system and other WATTS services indicate that the amount will not be significant. Neither the Determination, nor most of the laws of the United States are based on the assumption that pepole are inherently dishonest, but rather on voluntary compliance. Widespread cheating is, in our view, neither probable nor inherently undetectable. To give up the advantages of competition on the off chance that someone might cheat would not, in my view, be either prudent or productive.

INFORMING INTELSAT MEMBERS

We continue our long-standing efforts to keep the members of INTELSAT briefed on our actions.

Long before the Presidential Determination was announced, the Department of State launched a major effort to meet bilaterally with our major allies to discuss communications issues. Under the leadership of the Coordinator for International Communication and Information Policy, such sessions have been held with the United Kingdom, the Federal Republic of Germany, the Netherlands, Canada, Mexico and Japan. Additional meetings are scheduled later this month with Italy, the Vatican and, again, with the UK. Separate satellite systems have been a prominent topic in all of those meetings. In addition representatives of the the Department of State have met individually with representatives of many other countries including France, Spain, Brazil, Argentina, Chile, and most of the nations of the Caribbean. In every case we have carefully explained current U.S. actions on this issue, reiterated our continuing support for INTELSAT, and answered innumerable questions.

In addition, at meetings of the ITU and at the Assembly of Parties of INTELSAT, we have worked strenuously to make our story known. In formal sessions we have put our views on the record.

Once the Presidential Determination was signed last November our embassies in all INTELSAT member countries were provided with copies of the Determination, the letter to the FCC, a list of questions and answers to be used with host country officials, and a draft letter to be sent by our Ambassadors to appropriate officials explaining the issue in detail. Embassy officers were instructed to make our views known, not only to PPTs, but to ministries of foreign affairs, trade and economics. USIA has distributed material about the decision to

public affairs officers around the world with instructions to discuss the issues at every appropriate opportunity with host country officials. Here in Washington, the Department of State distributed copies of the Determination, the letter to the FCC, and the list of questions and answers, to all INTELSAT member country embassies with a diplomatic note offering to brief interested representatives.

However, we are not in a position to undertake extensive detailed discussions with other governments until the FCC completes its action and we have a specific proposal, including the identification of a foreign partner, to discuss. The United States decision process is a very open matter and although the Presidential Determination is known, it is not reasonable to expect that other governments will be in a position to have meaningful dicsussions on separate systems until the FCC has acted and a specific proposal is presented which meets the Executive Branch criteria and any FCC requirements.

The vitality of INTELSAT in the longer term will depend upon its ability to effectively and with economic efficiency serve a portion of the international communication market. Fiber optics may well offer very significant competition to INTELSAT. It is necessary that INTELSAT optimize its economic efficiency and take full advantage of its unique qualities to ensure its long term vitality. The current potential competition from the United States applicants for separate systems has already stimulated INTELSAT. It is important that the Parties and Signatories of INTELSAT give careful consideration to the future business of INTELSAT.

I have attempted to cover some of the current issues concerning separate systems. I would be happy to respond to questions you might have.

Thank you.

Mr. WIRTH. Thank you very much, Mr. Schneider.
Mr. Markey.

STATEMENT OF DAVID J. MARKEY

Mr. MARKEY. Thank you, Mr. Chairman.

Since Secretary Baldrige and I testified before this subcommittee last July, there have been new events, as you've heard. Both President Reagan has acted on the joint recommendations submitted by Commerce and State, and the FCC has begun a formal rulemaking proceeding.

I would like to focus primarily on the affirmative side of this controversy and to review some of the reasons why we in the administration think that having U.S. satellite systems, using American technology to serve American users, is a good idea.

To compete effectively in today's world economy, American industry has to continue to improve its efficiency and output. One of the ways in which many of our leading corporations are trying to accomplish these goals is by harnessing the new computer and communications technologies.

General Motors, for example, is developing sophisticated intracorporate networks which will link product design, manufacturing, distribution, and retail operations. Other companies, including GE, IBM, and AT&T, have reportedly started similar programs.

The kind of customized intracorporate networks which the new satellite systems are proposing to offer could make a significant contribution to this overall process. They could also help strengthen and expand our international services trade.

This services sector today accounts for more than 68 percent of the total gross national product, and the money we earn from international trade, services, and investments amounted to almost 40 percent of our total export income in 1983. Included are international banking and finance, data processing, services like accounting and engineering, and communications. Also included would be the $1.03 billion the United States earned from marketing TV programs abroad last year. Recent estimates indicate we had a services trade surplus in 1984 of about $17.6 billion.

Virtually all of the companies marketing services overseas are heavily dependent on communications. Since communications represents a significant part of the overall costs, any reductions we can achieve in international communications prices through competition should have a very positive effect.

The administration's satellite policy strikes a reasonable balance between the need to maintain a very strong Intelsat and the need to make sure that American users have a broader range of choices available when it comes to satisfying their international communications needs.

Under the President's determination, a separate satellite system will be limited to providing services that are not connected with the conventional switched networks. This will safeguard Intelsat from any significant economic harm.

Second, it will tend to focus the new entrants on serving emerging business needs instead of simply duplicating Intelsat's current conventional service offerings.

We start from the basic assumptions that private initiatives and competition should be the norm; monopoly and protection, the exception.

The United States is obviously committed to maintaining Intelsat as a strong and effective international organization. We believe, however, that the need to preserve Intelsat as a strong organization and the need to provide American users with access to the efficiencies that new technology offers can be accommodated.

The subcommittee should also bear in mind that allowing new entry was only one part of the overall administration program. We also examined the issues of Intelsat's pricing flexibility and broadening the range of customers with which Intelsat can deal.

We have petitioned the FCC to change its rules to allow for what we call competitive access by carriers and users to Intelsat, and the FCC has recently asked for public comments on our recommendations.

In conclusion, Mr. Chairman, I would like to thank you and other members of the subcommittee for the assistance and support that you have provided us in developing our satellite policy. There are FCC regulatory proceedings and consultation with Intelsat yet to come; however, we believe that the administration's overall program is sound, and we are optimistic that in the next few years this program will start to pay public dividends.

Thank you.

[The prepared statement of the Honorable David J. Markey follows:]

Statement of

David J. Markey
Assistant Secretary for Communications and Information
U. S. Department of Commerce

Mr. Chairman and Members of the Subcommittee:

Thank you for this chance to briefly review the Reagan Administration's international communications satellite policies.

Developments Since July 1984

Since Secretary Baldrige and I testified before the Subcommittee last July, there have been several major developments. Last November President Reagan acted on the joint recommendations submitted by the Commerce and State Departments, and he determined that new American international satellite systems are "required in the national interest" under the terms of the 1962 Communications Satellite Act.[1/] Subsequently, the Federal Communications Commission (FCC) began a formal rulemaking on the regulatory issues raised by the five separate system applications that have been filed. In February of this year, moreover, the Senior Interagency Group on International Communication and Information Policy (SIG) that I co-chair published its own "White Paper" discussing the background and reasons for the President's determination. We hope the White Paper will persuade readers that we reached sound conclusions, and also help to expedite the FCC's proceedings.

1/ Presidential Determination No. 85-2 of November 28, 1984, 49 Federal Register 46937 (Nov. 30, 1984).

Focusing on Benefits

Mr. Chairman, I expect many Subcommittee Members already have some familiarity with the issues which have been raised. INTELSAT has been presenting its arguments against the proposed new American systems and trying to explain why it should continue to have a global satellite monopoly. The individual system applicants have also been active presenting their side of the issues.

I would be pleased to answer any questions the Subcommittee might have regarding the Administration's policies and to address INTELSAT's arguments as well. Today, however, I would like to focus primarily on the affirmative side of this controversy and to review some of the reasons why we in the Administration think that having new U.S. satellite systems using American technology to serve American users is a good idea.

Promoting Industry Productivity

Communications and aerospace are two of the "sunrise" industries in which America remains a leader, and these "high-tech" sectors are particularly important since they contribute toward making U.S. industry more productive and competitive. These industries also provide much of the infrastructure that is needed to expand promising parts of our export economy, such as the services sector.

To compete effectively in today's world economy, American industry has to continue to improve its efficiency and output. One of the ways in which many of our leading corporations are trying to accomplish these goals is by harnessing the new computer and communications technologies. General Motors, for example, is developing sophisticated intracorporate networks which will link product design, manufacturing, distribution, and retail operations. Other companies including GE, IBM, and AT&T reportedly have similar programs underway.

Computers and communications obviously can be the source of great efficiencies. If our companies are given the chance to capitalize on these technologies, we should be in a better position to compete more effectively both at home and abroad.

Fostering Trade in Services

The kind of customized, intracorporate networks which the new satellite systems are proposing to offer could make a significant contribution to this overall process. But these proposed American satellite systems are also important because they could help strengthen and expand our international services trade.

The services sector today accounts for more than 68 percent of our total Gross National Product, and the money we earned from

international trade in services and investments amounted to almost 40 percent of our total export income in 1983.2/

Included in our services accounts are export activities such as international banking and finance, data processing, professional services like accounting and engineering, and communications. Also included would be the $1.03 billion the United States earned marketing TV programs abroad last year.3/

Unlike the situation in many other areas, the most recent estimates made by the Commerce Department's Bureau of Economic Analysis indicate that we had a services trade surplus in 1984 of about $17.6 billion. This was down significantly, however, from 1983's $28.1 billion surplus, and 1984 was the third consecutive year that this surplus declined.4/

Virtually all of the companies marketing services overseas are heavily dependent on communications. Since communications represents a significant part of their overall costs, any reductions we can achieve in international communications prices through competition should have a positive effect. Such reductions should make our companies more competitive, help them

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2/ 1985 U.S. Industrial Outlook at pp. 39, 43.

3/ MPAA estimate, February 1985.

4/ BEA, Survey of Current Business (1985).

expand their business, and ultimately provide for more and better American jobs.

Striking a Reasonable Balance

The Administration's satellite policy strikes a reasonable balance between the need to maintain a strong INTELSAT and the need to make sure American users have a broader range of choices available when it comes to satisfying their international communications needs.

Under the President's determination, the separate satellite systems will be limited to providing services that are not connected with the conventional switched network. This limitation will have two main effects. First, it will safeguard INTELSAT from any significant economic harm, since by far the bulk of INTELSAT's traffic and revenue stream will be "off-limits" to the new entrants. Second, however, it will tend to focus the new entrants on serving emerging business needs instead of simply duplicating INTELSAT's current conventional service offerings.

Encouraging Initiative and Competition

This Administration obviously has a strong view in favor of permitting private initiative and competition to go forward. We start from the basic assumption that private initiatives and competition should be the norm, and monopoly and protection the exception.

In this situation, we think that those who are in favor of perpetuating an INTELSAT monopoly over transatlantic satellite services bear a heavy burden of proof. The United States is obviously committed to maintaining INTELSAT as a strong and effective international organization. We do not want to do anything that would jeopardize its economic well-being. Our economic analysis, however, indicates there will be very little, if any, adverse effect on INTELSAT.

We believe, in short, that the need to preserve INTELSAT as a strong organization, and the need to provide American users with access to the efficiencies new technology offers, can be accommodated.

Helping INTELSAT Compete

The Subcommittee should also bear in mind that allowing new entry was only one part of the overall Administration program. We also examined the issues of INTELSAT's pricing flexibility and broadening the range of customers with which INTELSAT can deal.

The State Department's review of the 1973 INTELSAT Agreement concluded that INTELSAT now enjoys considerable flexibility and can compete with the new entrants on the basis of price. Such price competition is desirable as a matter of telecommunications policy since it should benefit users while giving the firms in the market an incentive to be efficient.

The issue of expanded access to INTELSAT is also an important part of the Administration's overall program. Comsat currently is the only U.S. firm permitted to deal directly with INTELSAT and to invest in the INTELSAT space segment. We believe other carriers and users should have the option of dealing with and investing in INTELSAT in the case of customized services.

We have petitioned the FCC to change its rules to allow for competitive access by carriers and users to INTELSAT, and the FCC recently asked for public comments on our recommendations. We believe competitive access, like pricing flexibility, will go far toward establishing a "level playing field" in the customized services area and thus make full and fair competition more possible.

Conclusion

In conclusion, Mr. Chairman, I would like to thank you and other Members of the Subcommittee for the assistance and support you have provided us in developing our satellite policy recommendations.

Obviously, the process here is just beginning. There are FCC regulatory proceedings and consultation with INTELSAT yet to come. We believe, however, that the Administration's overall program is sound, and we are optimistic that in the next few years, this program will start to pay public dividends.

Mr. WIRTH. Thank you, Mr. Markey. All three of you, we appreciate your staying within the timeframe.

The Chair will now recognize the members in the order of their appearance. We now have nine members who have come. We ask members also to stay within that 5-minute period of time.

Recognizing members in the order of their appearance, Mr. Swift.

Mr. SWIFT. Thank you very much, Mr. Chairman.

The executive branch in its white paper states that U.S. foreign policy and international communications and information policy requires continued strong international commitment, and the white paper says that unrestricted entry could undermine the integrity of this international enterprise, which would be inconsistent with U.S. national interest. And I assume you all agree with that.

The administration proposes to preserve the integrity of Intelsat and limit adverse impact by restricting the additional systems to providing services through the sale or long-term lease of transponders or space segment capacity for communications, but not interconnecting with public networks. That is kind of the key, as I understand it.

How do you prevent private line traffic sent from one location to another from leaking into the public telephone networks of either the United States or foreign countries?

How is that done technically, and how is it done in terms of policing it?

Mr. MARKEY. Let me start.

First of all, I don't think that we have said in our document that you can totally prevent it. As far as I know, there is no technical means to totally prevent that kind of traffic, some of the traffic from leaving the public switched network and every now and then appearing in the intracorporate systems that we are talking about here.

Like with most things that the Federal Communications Commission does, or any other Federal agency, you expect that people will obey the law. You would have restrictions here that I understand would be included in the license that would be provided to these applicants. As I understand it, anyone who would apply for a satellite dish, an Earth station, would have to get a license to use it in international trade and international traffic.

Mr. SWIFT. If I hear you correctly, you essentially hope they will just live up to the provisions of the license.

Mr. MARKEY. Not just hoping. I think there are restrictions that the FCC enforces. They have enforced them in a number of other cases where people were not able to use certain services because of license restrictions.

In addition, let me mention one other thing, if you don't mind.

Mr. SWIFT. Certainly.

Mr. MARKEY. There is something called software partitioning, which means that you can program your software in such a way that it will prevent interconnection with the switched network. Now that is still in the process, I understand, of being totally developed. But I also understand that it is pretty much available to be used in certain cases.

There are ways that we can urge people to use new technologies to make it if not certain, at least make it very difficult to violate these restrictions.

Mr. SWIFT. In July of 1983, when Congress was considering legislation to eliminate or limit the proposed FCC access charge plan, Chairman Fowler told our committee that bypass is difficult to detect, and enforcing the limitation on bypass, "would certainly present some very grave enforcement problems."

The Chairman's submitted statement stated the following:

> In many cases, it is very difficult to identify when bypassing is actually occurring. It could cost the Government substantial sums of money to investigate possible violations and to adjudicate the imposition of fines.

Now what has happened technically between July of 1983 and today is to suggest that detecting bypass, which this would be, is any easier or any less expensive to enforce than it was then?

Mr. MARKEY. Well, I don't think I've said it's going to be easy. But I think if you look at the kinds of people that we're talking about that have been using these new systems, it would be a very visible thing if a lot of traffic were to move off of the public-switched network and onto these new systems. People like AT&T and other long-distance carriers, international carriers, are going to have a great interest in making sure that that does not happen, because that would be their traffic.

Another thing that we have involved here, that we did not have involved in that instance, is that we are dealing with other countries, particularly European countries, who, I understand, make a very concerted effort to oversee how you are using your network. In most cases, they own all of the equipment, and you only lease it. I think that also tends to make this a little bit different from the bypass situation.

Mr. SWIFT. Mr. Chairman, I recognize my time is up. I got through about one-third of that particular line of questioning. I have about nine other lines of questioning. So I will be back.

Mr. WIRTH. Mr. Rinaldo.

Mr. RINALDO. Thank you, Mr. Chairman.

Chairman Fowler, the FCC has asked for public comments on the question of whether new licenses should be granted, and if so, the terms and the conditions under which the licenses should be granted.

Those public comments, I understand, are being filed right now, and that process will be completed within a few weeks; is that correct.

Mr. FOWLER. The comments were filed as of April 1, sir, and reply comments must be filed no later than June 5. It is about a 4-month comment cycle.

Mr. RINALDO. If I understand it correctly, then it is the FCC's intention to make a decision on whether to grant licenses based on these public comments; is that correct?

Mr. FOWLER. The first thing we would have to do, Mr. Rinaldo, is to digest the record. The staff will come up with recommendations on the policy questions that you referred to, and others, and there would be an order issued. After that order is issued, then the Commission, based upon the policy determinations made in that order,

would then judge each of the individual applications in determining whether or not they ought to be granted, as well as other matters which deal with certain technical rules we have that each applicant must comply with, quite aside from the policy question.

Mr. RINALDO. Then the answer to my question is basically yes.

Mr. FOWLER. That's correct, sir.

Mr. RINALDO. As you know, some parties have criticized the procedure that the FCC is following in this case. Specifically, these parties believe that the FCC should announce the terms and conditions under which it proposes to grant licenses, and then seek public comment on those specific proposed terms and conditions, rather than pursuing the more open-ended approach that the FCC has embarked upon—that is, asking for public comments on the desirability of approving licenses.

Let me begin by asking you, are you familiar with that criticism?

Mr. FOWLER. I have heard that, yes, among others.

Mr. RINALDO. Do you believe that the specific criticism I mentioned is a well-justified position, and if not, why not?

Mr. FOWLER. I think, Mr. Rinaldo, the way we are proceeding is exactly the way to go. We have a very open process, first of all. We have a very long pleading cycle, so that anyone who wants to be heard can and will be heard. We have asked a number of questions, both very general policy questions, as well as technical questions on design to try to make a public interest determination as to whether these kinds of alternative competitive satellite systems ought to be authorized.

Once we have made policy determinations, after public comment and deliberation by the Commission, I think we will be in a very good position, then, to then grant each of these applications.

Anyone who has any problems with any of these applications has had an opportunity already to have filed a petition against the specific application, some of which were filed as long as 2 years ago. And there was a voluminous number of pleadings filed at that time as to specific applications. And then there were comments filed by the applicants in opposition, and then reply comments by the petitioners.

And at that time, indeed, the Commission could have legally, as well as, I think, from a policy standpoint, made policy calls and granted licenses as a legal matter.

But we have gone much further, in response to congressional concerns. We have gone out with the omnibus notice of inquiry to ask these questions, in some respects again, to ask new questions, and specifically to get comments on the executive branch determination.

Once we have done all that, I think we will have done a very thorough and comprehensive job of ventilating all of the issues, and we will be in an ideal position and exactly where we should be in determining whether or not we grant a specific application.

Mr. RINALDO. As long as you are talking about ventilating the issues, let me ventilate one that I am aware of.

Intelsat argues that the competitive applicants are cream-skimming, in effect, the most lucrative lines of business.

Now would you comment on that and how approval would affect the vitality of Intelsat?

Mr. FOWLER. I would not like to make comments that would appear that I am prejudging. I would only observe, Mr. Rinaldo, that many of the services that are proposed to be offered by some of these applicants are not now, and have never been, offered by Intelsat. Therefore, the charge of cream-skimming falls by the wayside of its own weight.

Mr. RINALDO. You mentioned—and we know these applications have been pending for about 2 years—your decision will be—you will be through the decisionmaking process in 3 or 4 months; is that correct?

Mr. FOWLER. We will have the reply comments in June, and I believe we will have a decision sometime in the latter part of 1985.

Once that is done, we have to then grant or reject each of the individual applications. If one is granted, they are given a construction permit only, and then the Department of State comes in and initiates a consultation process under 14(d) of the Intelsat agreement, along with a foreign entity. We think that process will take a minimum of a year to 18 months, and it could then take even longer for an applicant, once granted and having jumped through all of the hoops, to be able to order the hardware and actually launch and become operational.

We are looking, it seems to me, at a very long time frame.

Mr. RINALDO. I realize my time is up. Thank you, Mr. Chairman.

Mr. WIRTH. Mr. Bryant.

Mr. BRYANT. Chairman Fowler, it strikes me that the limitation on customized services presents problems which are analogous to the problems of detecting a bypass in the domestic context.

In July of 1983 when Congress was considering legislation to eliminate or limit the proposed FCC access charge plan, you told a joint hearing of the Senate Commerce Committee and the House Energy and Commerce Committee that bypass is very difficult to detect, and that enforcing the limitation on bypass would certainly present some very grave enforcement problems. I am quoting you now.

Your submitted statement stated the following:

> In many cases, it is very difficult to identify when bypassing is actually occurring. It could cost the Government substantial sums of money to investigate a possible violation and to adjudicate the imposition of fines.

My question is, Has anything happened technically between July 1983 and March of 1985 to suggest that detecting bypass is any easier, and has anything happened to make enforcement of bypass any less expensive?

Mr. FOWLER. The first thing is, the volumes of people we're talking about in each case is different. In domestic bypass, it would be any business entity that wanted to employ a bypass for its own purposes and not use the public switched network.

Here we're talking about a limited number of players. That is, these applicants who have filed applications with the Commission and enforcement relating to this very small number, whereas in the domestic situation, we are talking about literally thousands or perhaps hundreds of thousands, so that the numbers are quite different in terms of enforcement.

The second thing is that if one of these applicants were to begin to try to engage in a massive interconnection effort, it would have to necessarily mount a large-scale advertising campaign for it to be successful. And that means, therefore, it could be easily detected—anything that is of any significance.

Now I hasten to say, Mr. Bryant, that there is no rule, at least as far as we know right now, that is 100 percent enforceable. But any significant effort to divert switched traffic through the systems would be necessarily public, because they could not succeed unless they advertised.

I know that Intelsat itself has an IBS [International Business Systems], service which it offers, which has the same condition—that is, that the users may not use the IBS service to interconnect into the public switched network, and the director general has been quoted as saying that that self-enforcement policy can be very efficacious indeed.

So it is the same condition for the same purpose now used by Intelsat as to its IBS service.

And last, there are some new technical measures, I understand, that may be in the offing. Mr. Markey mentioned what I called the neutered PBS software which would make it difficult, if not impossible, to interconnect, and there are other matters that are being studied now.

But we cannot bank on those. I would say simply that those are some of the things that we can reasonably rely on in the future.

By conditioning these licenses on their not interconnecting, it seems to me, with hundreds of millions of dollars invested in the satellite system, a satellite licensee would be very reluctant to violate one of the prime conditions, if the agency imposed one, that would jeopardize his investment by having his license revoked. That would also be true of a user employing an Earth station licensed by the FCC. So I think there is a panoply of reasons why we do not think there necessarily will be a problem, although I hasten to add that this is one of the questions we are studying thoroughly and asking for comments on in this precise proceeding.

Mr. BRYANT. If the assumption that the separate systems will not cause significant economic harm to Intelsat turns out to be wrong, what steps would you then be able to legally take to address the situation once the systems are operational?

Mr. FOWLER. That is a very big assumption. I think the first answer is, at this point, we have to go forward based on the executive branch determination and look at that determination, which states that such satellite systems are in the national interest and are required in the national interest.

I do not foresee the agency ordering one of those licensees to cease and desist their operations. I would observe that the satellites do have a finite life, and if there were to be a determination in the future that they somehow jeopardized the existence of Intelsat, then presumably no more of those systems would be authorized by the Commission.

Mr. BRYANT. What kind of a life would they have?

Mr. FOWLER. I have seen some estimates of 10 years. Some of the more state-of-the-art satellites can now go 10 years.

Mr. BRYANT. Thank you.

Mr. WIRTH. Mr. Broyhill.

Mr. BROYHILL. Thank you, Mr. Chairman.

I would like to address a question to Secretary Schneider and also some comments to Secretary Markey.

As you know, 2 or 3 weeks ago, I communicated with the President and asked the President to consider appointing a Government representative to monitor the Comsat activities and what went on at Intelsat meetings. That is really what I was talking about.

And I was gratified that this was done, and the Government representative did attend the recent Intelsat board of governors meetings.

And the question I would like to ask is, do you think that having a Government observer at the meeting was helpful?

Mr. SCHNEIDER. Yes, Mr. Broyhill. We understand that it is regarded as useful within the executive branch.

Mr. BROYHILL. Do you have any comments with respect to the experience, to that particular experience?

Mr. MARKEY. From what I have been told, it was a very positive experience. In fact, the Comsat people, we discussed it with them before it happened, and they were very cooperative. I think they understood that it provides certain protections to them, too, in their role as signatory.

Mr. BROYHILL. Do you think it would be helpful if Government observers attended future meetings of this type?

Mr. SCHNEIDER. Based on this meeting, I think it would be the case frequently that it would be helpful.

Mr. MARKEY. In this case, as you probably know, we did not have someone there for the entire meeting, but just for those matters where the Government had a particularly strong interest.

We are currently trying to work with Comsat to come up with a policy that we can all agree on for future meetings.

I think certainly it is something we are going to be working on, and I would expect that we would have observers for other meetings for particular issues where we have a very strong interest.

Mr. BROYHILL. Are you saying it depends on the agenda?

Mr. MARKEY. To a certain extent, it might. There are certain things that I do not think we would have to have observers there for, where Comsat could represent us.

In this case, it had to do with regulations, guidelines that were going to determine whether or not there was significant economic harm, and that, of course, directly bears on the President's decision here. So I would think that in the future we would look at the issues as they come up—and we have good advance notice from Comsat as to what is on the agenda—and make determinations as to whether or not we need an observer there or not. We are still trying to work that out with Comsat.

Mr. BROYHILL. You are talking about those instances where things on the agenda might be discussed where the economic interests of Comsat might be different in some respect or might be in conflict; is that what you're talking about?

Mr. MARKEY. Yes, sir. As you know, there are a number of other companies now involved in international communications that have an interest in what happens at Intelsat. In some cases, they

compete with Comsat. It's not really fair for them to have their interests represented by Comsat at these meetings.

So in cases like that, I think we would be very interested in having a Government observer.

Mr. BROYHILL. Secretary Schneider, did the representative that represented us, did that person come out of your shop?

Mr. SCHNEIDER. Yes, he is from the Department of State.

Mr. BROYHILL. Under your direction?

Mr. SCHNEIDER. Yes, that is correct.

Mr. BROYHILL. Have memorandums from that individual been circulated to the appropriate people in the administration, including Secretary Markey?

Mr. SCHNEIDER. All of the interested parties in the Government have been briefed. We have had an arrangement where we were together on it on an interagency basis for these international meetings, yes. All are informed of the output.

Mr. BROYHILL. Is there a procedure for informing those who may compete with Comsat, as Secretary Markey was alluding to a few moments ago with respect to those issues or those decisions that are made at that meeting and making sure that they are notified in a timely way? Is there a procedure for those kinds of notifications?

Mr. SCHNEIDER. We have not encountered that as yet, but as those circumstances arise, as agenda items come up that will require special circumstances for informing interested parties or whatever special arrangements might need to be made for the Government to relate the contents of what went on, we would make those arrangements on an ad hoc basis.

Mr. BROYHILL. I thank you for your response.

Mr. WIRTH. Thank you, Mr. Broyhill.

Mr. Bliley.

Mr. BLILEY. Thank you, Mr. Chairman.

Mr. Schneider, let's assume that the FCC decides to grant licenses for new international satellite systems that would compete with Intelsat.

As you know, some people have tried to argue that this would be a violation of the international agreement that the United States signed when it joined Intelsat. Specifically, that agreement states in article 14(d) that no country which is a member of Intelsat may grant licenses for satellite systems that would compete with Intelsat, unless the country that has granted such authorization seeks the approval of Intelsat.

If the FCC did decide to grant licenses for new satellite systems, would it be the intention of the U.S. Government to seek the approval of Intelsat, as contemplated by article 14(d) of the Intelsat agreement?

Mr. SCHNEIDER. Yes. After the license is conditionally granted by the FCC, we would undertake consultations with Intelsat under the provisions of 14(d).

Mr. BLILEY. If that is the case, I am a little bit confused as to why some people are contending that the approval of licenses by the FCC for competing satellite systems would violate the Intelsat agreement.

Can you shed some light on it for me?

Mr. SCHNEIDER. Well, there may be a number of explanations. To some degree, there may be understandings of the way in which the institutional arrangements work, and certainly in our discussions, subsequent to the President's determination in November, it indicated a considerable degree of misunderstanding.

In part, it was contributed to by a problem we had that, I suppose, is inevitable. During the course of Government deliberations, there was some press coverage that was inaccurate. The press coverage described the United States as going ahead with competitive systems without regard to our commitment to Intelsat.

In fact, the notion of maintaining our commitment to Intelsat is at the core of the Presidential determination. After the President made his determination, we made a very substantial effort, as summarized in my remarks, to acquaint member states of Intelsat and signatories with the U.S. position, and I think that has gone some distance in reducing the kind of mischaracterization of American policy intentions.

Mr. BLILEY. Thank you, and thank you, Mr. Chairman.

Mr. WIRTH. Thank you, Mr. Bliley.

Mr. Oxley.

Mr. OXLEY. Thank you, Mr. Chairman.

I would like to ask all of the panelists to respond to somewhat of a philosophical question, and that is: While it appears as recently as even yesterday, when we responded in kind to the situation with Japan, that we are trying as best we can to signal to the Japanese our need for them to open up their markets to our telecommunications, at the same time we have been through the divestiture of AT&T and other trends throughout the country, and in the world, toward divestiture, breakups, and deregulatory modes. It would appear to me that the efforts so far that have been directed toward the North Atlantic market and the whole question of satellite competition is pretty much in the mainstream of what is going on in this town, as well as throughout the world. I am wondering if each one of the panelists would care to comment on that—if they indeed see that as a trend, and whether, in fact, the efforts at providing competitive markets in conjunction with Intelsat in many cases is clearly the trend of the future?

Mr. Fowler.

Mr. FOWLER. Yes, Mr. Oxley.

I would initially observe that the Congress passed a brand new section 7 to the Communications Act, which essentially states that where a new service or technology is proposed to be adopted, any party wishing to oppose such service or technology bears the burden of demonstrating why it would not be in the public interest.

That, it seems to me, is a very clear expression of a policy by this Congress that, generally speaking, new services are to be preferred and new technologies ought to be introduced into the marketplace, and there has to be a compelling reason demonstrated why they should not be. Otherwise, the presumption is that they ought to be.

I think you are right in observing that the thrust is bipartisan, it seems to me, agreement to open up markets, to foster new services for the consumer, to promote new technologies.

Mr. SCHNEIDER. I would like to add a few points to that, Mr. Oxley.

One of the things that has profoundly affected the attitude of many of our European allies has been the effectiveness with which the United States has been an engine of economic development in the past few years.

As recently as the economic summit last year, the President's dialog with his counterparts in a number of the European countries, they expressed a good deal of admiration for the way in which the United States had become so effective an engine of development and a very conspicuous gainer in employment. And the U.S. model of encouraging the market forces of competition is really at the cutting edge of policy change in Europe now.

My observation has been that the European countries, to a considerable degree, are now seeking ways in which they can improve the possibilities for the development of competition and ease of entry into the industry generally.

So I think the steps we have taken in the telecommunications market are more likely than not to be emulated to at least some degree in many of the developed countries of the world.

Mr. MARKEY. Let me just add to that.

One of the things that perplexes me about some of the opposition here is that they seldom mention the fact that we have a Eutelsat system now in being in Europe, coordinated successfully with Intelsat, with no restrictions on what they can do at all. Arabsat has just gone into operation with 22 Arab countries, with no restrictions on what they can do, coordinated successfully with Intelsat. There is a system around the Indonesian area, coordinated with Intelsat, with no restrictions on what they can do.

I just saw a newspaper article that the Eutelsat system is in the business of looking for three more satellites. These are systems outside of the Intelsat system. And obviously they find that there are benefits to those systems.

And while they are arguing with us trying to find some of those same benefits for our users, they are using this technology to benefit their users.

So obviously that just supports what you have said. This is going on around the world. It is not anything new.

Mr. WIRTH. Thank you, Mr. Oxley.

We have a vote on. The members will be back very shortly, if you would wait patiently.

[Brief recess.]

Mr. SWIFT [presiding]. The subcommittee hearing will continue. Until the other members whose turn it is return, I will take advantage of the opportunity.

A figure has been used which—and I think the SIG report says that there would not be any harm to Intelsat because 90 percent of their service is voice traffic—where does the 90 percent come from? Did you take the part of their service that is on the switched network, and you assume that is the 90 percent?

Mr. MARKEY. I think those figures came from Intelsat documents. I'm not exactly sure. I don't remember that we said it was exactly 90 percent. We said, I think, looking at the documents that we had then from Intelsat, that the Intelsat projections were to the effect that the largest amount of their traffic by far was the so-called switched voice traffic.

Mr. SWIFT. I'm not trying to put words in your mouth, but what I assume has happened is that the figure is 90 percent of switched network, and that got translated into voice network.

Mr. MARKEY. Yes, sir.

Mr. SWIFT. If you establish these independent, competing services, and let's say a major corporation, Westinghouse, wants to deal with—Westinghouse, New York wants to deal with Westinghouse, Bonn, some of that is going to be voice, isn't it?

Mr. MARKEY. Sure.

Mr. SWIFT. So the 90 percent is not—that is service that would otherwise be in the switched network if it were not for the competitors.

Mr. MARKEY. That's right.

Mr. SWIFT. So the 90-percent figure is not accurate?

Mr. MARKEY. No, it is accurate in the sense that we took the figure that Intelsat gave to us at that point. They are saying now it is much less than that. But it was accurate in the sense that——

Mr. SWIFT. What I thought we agreed to just now was that what the 90 percent stands for is the amount of switched network stuff, right?

Mr. MARKEY. Yes.

Mr. SWIFT. So now if Westinghouse buys a service from Orion or somebody else, what used to be on the switched network of their voice activity will now be on their leased line. I don't know what it is, but it is something different than 90 percent. It is something less than that.

Mr. MARKEY. Probably.

Mr. SWIFT. And how much that is is something we should probably know before we proceed down this path. Wouldn't you think that would be prudent?

Mr. MARKEY. I don't know how you make those kinds of projections myself. The projections that we have made at the Department of Commerce are that these areas are going to grow by about 14 percent a year. So even if some traffic leaves Intelsat, as you have pointed out—and it well may—we would suspect that just the ordinary growth of the traffic would mean that there would not be harm to any extent.

Mr. SWIFT. Did I hear you say earlier that you had contemplated anything you might do in eliminating interconnection between any two competing services? Did you say that?

Mr. FOWLER. That I would contemplate eliminating?

Mr. SWIFT. Limiting or eliminating. In other words, should competitors to Intelsat, A and B, be able to interconnect themselves, A and B interconnect?

Mr. FOWLER. I cannot give you an answer off the top of my head, but it seems to me, I don't see any reason why, if the limitation applies to all of the applicants, the executive branch limitations, they will be equally as effective, whether or not these entities are interconnected among themselves.

Mr. SWIFT. That would seem a logical conclusion. To the degree we have a disagreement it would seem to be over how large the bypass would be. But to whatever degree it is a problem, it seems to me, it would be geometrically increased if the different services could interconnect as well. The job of trying to run down where all

those communications links were going would be almost impossible, I would think.

I have already had my time, and I promised when members returned, they would be recognized.

The gentleman from Louisiana, Mr. Tauzin.

Mr. TAUZIN. Thank you, Mr. Chairman.

Mr. Fowler, I cannot help but believe that if private competitors, separate systems entrepreneurs, enter the trans-Atlantic business, that the potential for that business is pretty good.

I also hear that Eutelsat is interested in turning it around and getting into the trans-Atlantic business, if, in fact, we allow private competitors.

The prospect is for great proliferation of those systems. I cannot help believing, if that occurs, it will amount to a real siphoning off of the traffic base that Intelsat relies on today.

Now what would make me not believe that? Why shouldn't I believe that?

Mr. FOWLER. It is not a question of whether you would believe or not believe, but what you would be disposed to believe in terms of ultimate harm to the Intelsat system, which ties in with your question directly.

I think the first answer is that many of these applicants are proposing entirely new customized services that have not and are presently not being offered by Intelsat.

Mr. TAUZIN. I understand——

Mr. FOWLER. That goes to the question of diversion.

Mr. TAUZIN. It is very important. But I understand that Intelsat Business Services is providing many of those services that are virtually comparable to the customized services of these competitors. Is that not true?

Mr. FOWLER. That is correct. But there are many services proposed that Intelsat does not now offered. Moreover, the basis on which these would be offer by these private systems is quite different in some cases. That is to say, they would permit a company to purchase circuits, to purchase a satellite transponder, and own the transponder and do with it what it wishes over the life of the satellite.

This supplies a great deal of stability and certainty to the long-range planning of that company, because it owns its satellite capability, in effect. You cannot do that, for example, with an Intelsat service.

Mr. TAUZIN. Granted there may be some advantages to going with the private system.

Mr. FOWLER. My point is that these are quite different distinctions.

Mr. TAUZIN. Given those advantages, be they in price or control of your own system, doesn't that mean that that is business that Intelsat is not going to get? Doesn't that erode the traffic base of Intelsat?

Mr. FOWLER. Not necessarily.

Mr. TAUZIN. Why not?

Mr. FOWLER. Because some of the systems' services, as I said before, have not historically been offered by Intelsat. That is one of the reasons—in fact, the applicants are proposing these systems be-

cause there is a demand on the part of users for some of the new customized services.

I was just looking at the record of the comments that were filed, Mr. Tauzin. Many of the U.S. users said, "Give this a try. There are many services we would like to have that we cannot now get."

Mr. TAUZIN. But assuming Intelsat is supposed to grow—and I understand its commitments were based upon an annual growth rate of 15 percent—assuming it is supposed to grow, obviously like a good system, it is supposed to expand. It is supposed to make new offerings. It is supposed to get into those offerings that people want and desire.

If it cannot do so because those offerings are being made by competitive systems, now, Intelsat cannot grow at the annual rate of 15 percent that it is supposed to grow at.

Then I cannot help but wonder why you cannot see, as I believe, that Intelsat will be hurt, that its traffic base will be weakened in terms of its annual growth projections, and therefore its international function will be damaged.

Mr. MARKEY. Could I respond to that?

Mr. TAUZIN. Yes, Mr. Markey.

Mr. MARKEY. I get the impression that you are assuming that Intelsat is not going to respond to any of the competition and provide some of these services that it now does not provide.

Mr. TAUZIN. You only have so much demand out there. Intelsat's growth in 1984 was only 10.8—10.6 percent. It was below the projections made when the commitments were made. Therefore, it is not growing already at the pace to meet its commitment, if you look at 1984 figures.

If other competitors are taking part of the demand away from it, how can it possibly grow to meet those commitments?

Mr. MARKEY. I do not agree with your premise that there is not going to be a stimulation in traffic, when we take care of some of the needs that are not now being taken care of. Certain people are not using Intelsat because Intelsat does not fill their needs.

Mr. TAUZIN. My answer to you is, if it does not and they want those services, and Intelsat is growing at a lower rate than it is supposed to, then obviously it has to move in and provide those needs.

Mr. MARKEY. We hope they will.

Mr. TAUZIN. Why can't it and why wouldn't it do that, and isn't competition going to damage its ability to do that?

Mr. MARKEY. What we have to remember here is, this decision of the President did not just indicate that he wanted to see competition. He also wanted us—he asked the State Department and the Commerce Department to look at the present competitive situation to make sure that Intelsat could compete with any new competitor.

Mr. TAUZIN. That's awfully important.

Mr. MARKEY. That is what we're trying to do. We followed the decision in proceeding to urge more direct access to Intelsat by people other than Comsat. We think that would stimulate traffic for them.

They also have, as the State Department has indicated, flexibility in pricing. So we think Intelsat—and I think they have shown this in how active they have been around this town—they are not

going to sit back and take this on their heels. They are going to get out there and compete, and they're going to get a lot of this traffic.

Mr. TAUZIN. I hope they do. But I have to tell you that I am concerned about whether we are going to damage their ability in some respects to stay afloat.

The January 30 meeting, the extraordinary minutes of the international organization, the France attendee took a different view than those of you on the panel today with respect to the ability of separate traffic streams to be totally separated from the public switched system. In fact, they answered the question, "No, you cannot separate them," and they said no on the basis of extensive studies and experience with the telecommunications network in France and said, "We do not think you can separate them properly."

That is a position we can argue about. But what concerns me is that if my fears are right, that proliferation of competitive systems will drain away the demand, be it old or new demands that are necessary for growth projections for Intelsat, and the possibility exists that you may not be able to contain the separate systems from the public switched systems, if any of that is true, and I suppose my bottomline question to you is: At what point do you—will you believe that enough damage has been done to Intelsat that you will say, "Wait. We have got to reverse our position. We've got to reverse our policy," and if you reach that point, can you reverse it?

Is there a bottomline point where the international obligations of Intelsat will be damaged, where the first consideration of its function mandates that you rethink your policy, and could you reverse it at that point?

Mr. SCHNEIDER. Yes, Mr. Tauzin. If the circumstances arose in the way that you describe, we could reverse it, because there was a Presidential determination that was based on an understanding of the way in which the technology was evolving that led the President to the belief that the provision of new services by new entrants could be helpful.

The reason why we do not think it is likely to come to pass, if I could use a parallel to the computer industry, the fact that hundreds of new entrants have come into the computer industry has not drained off business from a few of the IBM's and the Honeywells and so forth, but it has expanded the market to the point where there is much more demand out there, much more for everyone.

In the case of telecommunications services, the demand itself is growing dramatically because of the way in which technology is evolving to find new uses for telecommunications services, and for that reason, we believe that both Intelsat will be able to prosper because of the demand for voice traffic, and the providers of customized services will be able to fill those needs in parallel.

Mr. TAUZIN. Final question, Mr. Chairman, if you don't mind.

You are telling me you don't believe that will happen—I hope you are right—if you pursue this policy. But if you're wrong, if you put all of those systems out there, if all of these private entrepreneurs make these enormous investments and they're all out there, and if others in the European Community respond by themselves

getting into the business and competing, how do you unscramble that egg?

How do you then protect Intelsat?

Mr. SCHNEIDER. It seems protection of Intelsat is a policy assumption. There are a number of ways in which this could be done.

First, licenses are granted to the U.S. participants, and landing rights in the United States are granted by U.S. regulatory authorities. So the terms of those licenses and landing rights could be modified to deal with the situation you describe. So I think the matter could be—is technically capable of reversal, if we chose to do it.

Mr. TAUZIN. In other words, you just cancel the licenses of the people who made all of those investments?

Mr. SCHNEIDER. You might have to modify the terms. These are investors who are taking a chance on the competitive market. If their estimate of the viability of the demand for these customized services are not there, they will also suffer economic losses, but that is the nature of business activity.

Mr. TAUZIN. I apologize for going on, Mr. Chairman.

I only hope before you pursue this policy to its conclusion, that you really know these answers before you do it. If you're wrong, I don't see how you're going to tell all these businessmen that they can no longer use the satellites they have invested in and the systems they have built after they have got them up, they're working, and after the damage may have been done to Intelsat.

If our national purposes and our foreign policy purposes in Intelsat are severely damaged at that point, we are going to make an awful choice that I hope we don't have to face.

Thank you, Mr. Chairman.

Mr. SWIFT. I share the skepticism of the gentleman from Louisiana, and I would very much like to see a schematic drawing of the wonderful device you have for putting this particular toothpaste back in the tube.

I recognize the chairman of the full Committee, Mr. Dingell.

Mr. DINGELL. Mr. Chairman, I thank you.

Gentlemen, welcome to the committee.

Mr. Fowler, as you recall, I have a letter from you saying that you do not intend to allow public comment on the Commission's proposal for resolving the international satellite issues.

Can you tell me why you would foreclose public comment on that matter?

Mr. FOWLER. I don't believe we said that, sir. We have indicated by this proceeding that we now have underway that we have a forum that is designed explicitly to invite and receive comments from any party wishing to do so.

Mr. DINGELL. As I understand it, you propose to allow comments on the proposals that are before the Commission at this time, but that the Commission's own proposal will not be subject to public comment, and I so interpreted your letter.

Am I in error?

Mr. FOWLER. It would be subject to petitions for reconsideration.

Mr. DINGELL. But not for public comment?

Mr. FOWLER. That is, in effect, public comment, yes, sir.

Mr. DINGELL. No. Because a petition for reconsideration has procedural constraints on it, and it involves only those persons who were participants in the original proceeding, does it not?

Mr. FOWLER. There are no constraints whatsoever on what they may file on the petition for reconsideration, so long as it is relevant to the decision of the Commission.

Mr. DINGELL. Why is it that you have not gone the rest of the way and permitted public comment on the proposed action of the Commission?

Mr. FOWLER. First of all, we have not taken any action yet, Mr. Chairman. We have asked certain questions, and specifically one of the main issues that we have asked for comment on is the executive branch determination.

Mr. DINGELL. I applaud that, and I commend you for that. But as I gather, you still have not taken the step that it is necessary to permit public comment on the proposed action of the Commission.

Mr. FOWLER. Well, again, we are asking right now—the very process we are going through now is designed to permit everyone comment on every single issue.

Once we make a finding through an order, anyone who disagrees with it will have yet another opportunity on petitions for reconsideration.

Mr. DINGELL. But not an opportunity to comment.

Mr. FOWLER. Yes, indeed. Yes, sir.

Mr. DINGELL. You say a petition to reconsider is the same as a comment on the part of the public during a publicly noticed period for comment on a particular proposal?

Mr. FOWLER. I am saying they will have the same opportunity through the petition for reconsideration to again advance their viewpoints on what we did and why it was right or not right.

Mr. DINGELL. Well, I will be interested to observe whether, in fact, the public will be afforded full opportunity to comment on the proposed action which is taken by the Commission.

Mr. FOWLER. Mr. Chairman, may I add one thing, sir?

If the Commission were to do something different than that proposed through the executive branch determination, I can represent to you here today, sir, we would in that event ask for further comment.

Mr. DINGELL. For further comment?

Mr. FOWLER. Yes, sir.

Mr. DINGELL. That comforts me mightily.

Let me pose an additional question. Can you give us some estimate of the capacity of the international telecommunications system, if all of the alternative systems that are now in proposal are in operation by 1995?

Mr. FOWLER. What would the total capacity be?

Mr. DINGELL. Total capacity in terms of number of circuits?

Mr. FOWLER. I cannot off the top of my head.

Mr. DINGELL. Would you grab a number out of the air?

Mr. FOWLER. Not really. I would be delighted to consult with my trusty staff and give you a number, sir.

Mr. DINGELL. What about the number of 700,000 circuits being available at that time? Is that an unreasonable number?

Mr. FOWLER. I just do not know, sir. That may well be.

Mr. DINGELL. That would be compared to 82,000 circuits.

Mr. FOWLER. I do not know what the exact number is.

Mr. DINGELL. 82,000 circuits to meet forecasted demand.

Mr. FOWLER. I'm not clear, when you use the term "circuits," what widths you're talking about.

Mr. DINGELL. I'm talking about voice-grade equivalent circuits. I gather, if these figures are correct, that that is 10 times the amount of capacity for which there is projected need and forecasted demand.

Mr. FOWLER. The arithmetic seems right; yes, sir.

Let me hasten to add, sir, that many of the new services are custom services that use very wide bandwidths and take enormous circuit capacity, so that it is somewhat misleading simply to say that it is x times more than present capacity, in that some of these customized services are not now and have never been offered by Intelsat. If offered through these alternative systems, even though there are a great number of new voice grade circuits created, as many of these circuits are for computers to talk to other computers and require very wide widths of spectrum or frequencies, we may well see all of these circuits and more being required in order to accommodate these new customized services.

Mr. DINGELL. Would you review the market estimates and tell us whether you disagree with them at the Commission and to what degree you do so?

Not at this particular time. Just if you would submit that for the record.

Mr. DINGELL. Let me ask you this question, Mr. Chairman.

Does Intelsat have sufficient pricing flexibility to meet the new competition that would be posed by the administration's proposal?

Mr. FOWLER. We asked that question in our notice of inquiry, sir, and we're getting comments on that now. That is also a matter for, it seems to me, the Board of Governors and the Assembly of Parties of Intelsat particularly to make a determination on.

Mr. DINGELL. How about the FCC?

Mr. FOWLER. No. We do not have any role in that determination.

Mr. DINGELL. Isn't that part of your judgment in allowing competition?

Mr. FOWLER. It could be part of our determination as to alternative satellite systems, and we do ask questions on the question of flexible pricing.

But the question as to whether or not they have the flexibility within the present Intelsat agreement to flexibly price is a decision that the Commission has nothing to do with directly.

Mr. DINGELL. Doesn't the Intelsat agreement require global price averaging, which would prevent Intelsat from pricing to meet the new services on the North Atlantic route?

Mr. FOWLER. As I understand it, Chairman Dingell, the Intelsat agreement provides that the same prices have to be charged for the same services. That does not mean, however, that if Intelsat provides new services, they cannot price them—since they are different services, they may price them differently than other services presently offered.

Mr. DINGELL. It indicates a strong possibility that they might lack the necessary pricing flexibility.

Mr. FOWLER. No, sir, it does not. I cannot say that.

Mr. DINGELL. Have you had any inquiry on this point?

Mr. FOWLER. Again, the determination as to what legally the body we call Intelsat may do under the Intelsat agreement is not an area where the Commission will make a determination. That will be made by the signatories themselves. If they conclude that the agreement does not permit that, they can change the agreement.

Mr. DINGELL. Mr. Schneider, same question to you. Does Intelsat have sufficient flexibility in pricing to meet the new competition?

Mr. SCHNEIDER. Yes, Mr. Chairman. We believe that Intelsat does have adequate pricing flexibility, because it is only required to charge the same price for the same service. But a new service can, if they choose to compete with new entrants, can price their services flexibility within the existing Intelsat articles.

Mr. DINGELL. What do you have in the way of either legal analysis on this point or economic analysis on this point?

Mr. SCHNEIDER. During the course of the Department's deliberations on this subject, we had review of this by our legal staff. We studied the articles.

Mr. DINGELL. What you are saying is, "Trust us." I asked you what legal analysis you have at the Department of State on this point.

Mr. SCHNEIDER. The legal advisors at the Department of State has a staff that has helped the Department reach a judgment on this, including advice as to whether or not the Intelsat articles provide pricing flexibility. The conclusion was that it did.

Mr. DINGELL. Is that a published study available to the public?

Mr. SCHNEIDER. No, we have not published it. We published the conclusions of the study in the executive branch white paper. We would provide, Mr. Chairman, if you choose, for the record, the characterization of the Department's views on this subject, if that would be helpful.

Mr. DINGELL. That is very different from a study which would be a legal analysis.

My question was, do you have any legal analysis at the State Department on this point?

Mr. SCHNEIDER. In order to arrive at the conclusion, we had to have the legal analysis done of this.

Mr. DINGELL. Has the legal analysis been put out to the public for comment?

Mr. SCHNEIDER. No, it has not been put out to the public for comment.

Mr. DINGELL. Would you submit it to the committee, so that we can review it?

Mr. SCHNEIDER. We will give you the documentation.

[Testimony resumes on p. 182.]

[The following information was submitted for the record:]

POSITION PAPER

INTELSAT LEGAL OPINION CONCERNING THE DETERMINATION OF INTELSAT SPACE SEGMENT UTILIZATION CHARGES

Issue: The INTELSAT Legal Advisor has issued an opinion on the subject based, in part, on the responses of three U.S. law firms to a single carefully tailored question. The Director General and others can be expected to draw on the opinion during any discussion of the degree to which pricing flexibility is available to INTELSAT under the Agreement, the Operating Agreement, and the implementing general rules established by the meeting of Signatories.

U.S. Position: The United States does not disagree fundamentally with the conclusions of the INTELSAT Legal Advisor presented in the Legal Memorandum of December 14, 1984 1/ (AP 9-18, BG 61-62). However, those conclusions, unless understood within their self-limited context, may be cited erroneously as support for a variety of propositions. The application of the INTELSAT legal opinion, is therefore, more worrisome than the opinion itself. The question posed to the three law firms by INTELSAT relates only to a portion of the INTELSAT Legal Opinion and is misleading in its simplicity.

Discussion: After an analysis of the Agreements, their negotiating history, the general rules implementing the Agreements and the past practices of the Board of Governors, the INTELSAT Legal Adivser drew the following conclusions indicating considerable flexibility in the determination of INTELSAT space segment utilization charges:

1/ This memorandum appears to be a refinement of the Appendix to AP 9-13 (BG 59-29 dated June 12, 1984). The USG does not concur with much of the content of AP 9-13. Specifically, the USG does not concur (1) that the Agreements establish legal restraints preventing INTELSAT from adjusting rates to compete effectively absent modification of the Agreements and (2) that new entrants would be free to establish rates on any route as required by competitive circumstances [unconstrained by the need to recover costs.]

(1) There is no absolute requirement that utilization charges for a particular type of utilization must recover the cost of making that type of utilization available. Rather, cost recovery is an objective to be met, "as far as practicable" in each specific case, taking into account all the relevant factors including market and business considerations.

(2) While all users must be charged the same rates for the same type of utilization, the Board has significant discretion to define different types of utilization on the basis of operational parameters, including voice, TV, data, power, bandwidth, type of transponder, degree of protection, role of the satellite to be used, etc.

The first conclusion rests principally on rules established by the meeting of Signatories as required by the Agreement (Article VIII (b)(v)(C). These rules provide, in pertinent part, that "the charge for each type of space segment shall be fixed with the objective that that type shall make an appropriate contribution to the overall revenue requirement of INTELSAT", reflecting, "as far as practicable", "the cost to INTELSAT of making available the space segment capacity provided for the purpose of the type of utilization in question." The danger in the reformulation presented by the INTELSAT Legal Advisor is that the wording of his first conclusion could be cited to support the proposition that INTELSAT can market a service below cost if appropriate "business considerations" exist. It is doubtful that a marketing strategy designed to discourage competitive entry by non-INTELSAT satellite service providers would be a legally sufficient "business consideration" to warrant below-cost service offerings by INTELSAT. Article 8 of the Operating Agreement articulates the principle which the general rules promulgated by the meeting of Signatories are to implement. It provides, in part:

> . . .Such charges [space segment utilization charges] shall have the objective of covering the operating, maintenance and administrative costs of INTELSAT, the provision of such operating funds as the Board of Governors may determine to be necessary, the amortization of investment made by Signatories in INTELSAT and compensation for use of the capial of Signatories. (Article 8(a)).

In short, charges are to be cost based. While the parameters defining this cost-basing might be identified collectively as "business considerations", a pricing policy of marketing below cost simply to ensure market share or to drive out potential competitors (and allow a subsequent rise in tariffs) does not appear supportable under the INTELSAT Agreements.

The analysis of the second conclusion of the INTELSAT Legal Advisor centers on the term "type of utilization" which INTELSAT uses interchangeable with "type of use" and "type of service." The USG does not disagree that "the Board has significant discretion to define different types of utilization on the basis of operational parameters. . ." However, the listing of the parameters by INTELSAT is not exclusive, and may operate collectively so as to have geographic effects (even though geography itself is an impermissible basis for discriminating between types of utilization). The following example is drawn from the INTELSAT Legal Opinion:

> The Board of Governors cannot legally characterize as a different type of utilization (and hence attract different charges) an offering whose only distinctive element is the identity of the users, the points of destination or the geographic region involved; for instance, a New York-London link cannot be characterized as a type of utilization different from a New York-Lagos or a Los Angeles-Manila link, all other things being equal. (Emphasis added)

All other things are hardly ever equal. The last (emphasized) phrase in the preceeding quotation masks important considerations. Space segment capacity is a limited resource when viewed for the accomplishment of a specific purpose. The consumption of this resource can appropriately serve as one of the operational parameters upon which utilization charges are based. However, a single "service" may consume differing amounts of space segment capacity depending on operational factors. For example, single voice telephone circuits may utilize different capacity on the same satellite even though the transponders carrying both signals are fully utilized. This is true because a transponder can carry more telephone signals if those signals are in a single "bundle", i.e., from a single location to a single location utilizing a single carrier frequency, than a transponder which must carry multiple "bundles" each identified with a different carrier frequency. Frequency interference characteristics cause the number of usable circuits on a transponder to decline as the number of "bundles" increases. Thus what a lay person might identify as a single service (a telephone call) could consume varying amounts of space segment capacity. The INTELSAT Legal Opinion does not deal with this issue, nor do the opinions commissioned from various law firms (the question passed to them included services "identical in all other respects"). If "type of utilization" were defined in a way to include consideration of the amount of space segment capacity consumed per traffic path then the operational parameters giving rise to different definitions of types of utilization might increase accordingly. (This conclusion is presented in the subjunctive mood because it is unclear the extent to which present INTELSAT tariffs include this factor.) "Bundled" signals are geographically dependant; it is conceivable, therefore, that the space segment capacity used by a NY to London telephone call would be less than that space segment capacity utilized by a NY to Nairobi telephone call. INTELSAT documentation has not called attention to this possibility nor to its implications for pricing.

FLEXIBILITY TO COMPETE

INTELSAT in an Era of Separate Systems

Views of the Department of State

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FLEXIBILITY TO COMPETE

INTELSAT in an Era of Separate Systems

Introduction

The prospect of additional limited competition to INTELSAT beyond that already posed by existing international satellite and cable systems has raised the issue of whether the 109-member consortium has sufficient "flexibility" to compete under its basic charters and by virtue of historical practices. Interest in this flexibility issue has been heightened by recent decisions in the United States that pave the way for entry by private satellite companies into a narrowly circumscribed international market segment, pending action by the Federal Communications Commission, concurrence of a foreign partner, and INTELSAT consultation.

Further, any consideration of reopening the INTELSAT Agreements at this time would set an unfortunate precedent of attempting to deal with a hypothetical concern which has not been justified. One of the keys to INTELSAT's success has been the purposeful flexibility of the Agreement which has been able to accommodate and deal effectively with the changing technological environment.

Conclusions: Based on Evidence

The Department of State has studied all the evidence available related to INTELSAT's existing flexibility, and concludes that opening the INTELSAT Agreements for renegotiation of Articles III and V on the argument that the organization lacks sufficient flexibility to compete in the new era of satellite communications is at this time unnecessary and ill-advised.

The observations reported in the subsequent sections lead to the following conclusions:

-- The terms of the INTELSAT Agreement underpinning the rules and practices for setting prices provides ample flexibility in establishing prices for individual services and provides a possibility for cross-subsidy among services.

-- INTELSAT's own legal assessment concludes that the Board of Governors has "significant flexibility."

-- With its IBS Service, INTELSAT already has demonstrated considerable pricing and marketing flexibility.

-- The Board of Governors already has taken aggressive action to review and possibly establish a new charging policy which can be done under the terms of the existing Agreements.

-- The U.S. Signatory to INTELSAT (COMSAT) is on record expressing the view that substantial flexibility to compete with separate systems exists under current arrangements.

-- Even were INTELSAT's charges to be reduced to zero, there is no assurance this would necessarily result in more competitive prices to the end user since the space segment is only a small part of ther user charge.

-- Significant constraints have been placed on new U.S. entrants regarding the service markets in which they are permitted to compete.

-- Several additional factors contribute to INTELSAT's substantial capability to compete, including economies of scale, excess capacity, global coverage, reputation for quality, technical expertise and market power.

-- Any considerations of reopening the INTELSAT Agreements at this time would set an unfortunate precedent of attempting to deal with a hypothetical problem before it has any basis in reality.

Finally, it should be noted that one of the keys to INTELSAT's twenty years of success has been the built-in flexibility of the language of the Agreement. This flexibility has well served the interests of the Signatories in accommodating new opportunities and new challenges in a changing technological environment.

Background

The Presidential Determination

Since March of 1983, several U.S. firms have filed applications with the Federal Communications Commission to establish international communications satellite systems separate from INTELSAT. Acceptance of the applications for consideration by the FCC prompted the Executive Branch to undertake a 20-month review of the international satellite policy of the United States. The objective of the review was to determine whether approval of separate systems would be consistent with prevailing law, practice and treaty obligations, and whether such systems would be consistent with sound foreign policy and supportive of the national interest.

On November 28, 1984, the President determined, pursuant to the Communications Satellite Act of 1962, that separate international communications satellite systems are required in the national interest.[1/] The President further directed that the United States, in order to meet its

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1/ A detailed explanation of the issues surrounding the Presidential Determination are provided in A White Paper on New International Satellite Systems issued by the Senior Interagency Group on International Communications and Information Policy, February 1985 (referred to subsequently as SIG White Paper).

obligations under the INTELSAT Agreements, shall consult with INTELSAT regarding any systems actually authorized by the Federal Communications Commission. He directed the Secretaries of State and Commerce to inform the FCC of criteria necessary to ensure the United States meets its international obligations and furthers its telecommunications and foreign policy interests.

The Secretaries informed the FCC that prior to final authorization of any systems two conditions must be met:

(1) each system is to be restricted to providing services through the sale or long-term lease of transponders or space segment capacity for communications not interconnected with public-switched message networks (except for emergency restoration service); and,

(2) one or more foreign authorities are to authorize use of each system and enter into consultation procedures with the United States Party under Article XIV(d) of the INTELSAT Agreement to ensure technical compatibility and to avoid significant economic harm.

These conditions were imposed to safeguard the INTELSAT system from significant economic harm and to underscore U.S. adherence to the terms of the INTELSAT Agreements. The United States has faithfully followed INTELSAT procedures in prior consultations on systems separate from INTELSAT, and will continue that practice for all future separate systems.[2/]

Competitive Access and Flexibility

Subsequent to the Presidential Determination the Secretaries of Commerce and State were asked to consider two additional issues related to international communications satellite policy: competitive access to the INTELSAT space segment and INTELSAT's "pricing flexibility."[3/]

2/ Pursuant to the consultative process of Article XIV(d), the Assembly of Parties has arrived at findings, in the form of recommendations, supporting the utilization of more than twenty U.S. domestic satellites for international service.

3/ Letter from Secretary Baldrige to Secretary Shultz dated November 30, 1984 and Secretary Shultz's response, December 20, 1984.

On February 21, 1985, the National Telecommunications and Information Administration petitioned the FCC to consider authorizing competitive access by carriers and users to the INTELSAT space segment for the provision of customized international communications services.

The Department of State has completed its study of INTELSAT's pricing flexibility.[4/] This document reports the Department's observations regarding the following relevant factors:

- The terms of the INTELSAT Agreement underpinning the rules and practices for setting prices;
- INTELSAT's own assessment of the extent of its pricing flexibility;
- INTELSAT's flexible pricing practices;
- The U.S. Signatories' comments on the issue of flexibility;
- The unique position of INTELSAT in its market; and
- Special considerations for U.S. policymakers.

4/ NTIA has also examined INTELSAT's pricing flexibility in the context of the economic consequences of the Presidential Determination. See, "INTELSAT Economics" Summary Analysis, U.S. Department of Commerce, National Telecommunications and Information Administration, April 3, 1985.

Evidence of Flexibility

Terms of the INTELSAT Agreement

Article V(d) of the INTELSAT Agreement (TIAS 7532) states that "... The rates of space segment utilization charge for each type of utilization shall be the same for all applicants for space segment capacity for that type of utilization."

This provision provides the guiding principle for establishing charges. It means, essentially, that once a particular utilization (service) has been defined, prices charged for that service cannot discriminate amongst individual users or geographical regions. However, "type of utilization" allows great flexibility in the definition of a specific service, with services and charges differentiated on the basis of volume, bit rate, preemptibility, term of lease, and other factors.

As pointed out in INTELSAT's Legal Memorandum on this issue, charges are set according to general provisions of the INTELSAT Agreements in addition to Article V(d). These include:

> Article 8 of the Operating Agreement, which addresses the relation between utilization charges, costs, and revenue requirements; Article VIII(b)(v)(C) which provides for general rules adopted by the Meeting of Signatories concerning charges for use on a non-discriminatory basis; and Article III on the scope of INTELSAT activities.5/

5/ "Determination of INTELSAT's Space Segment Utilization Charges," Legal Memorandum, INTELSAT, December 14, 1984, p.1., (referred to subsequently as INTELSAT Legal Memorandum).

Article 8 of the INTELSAT Operating Agreement (TIAS 7532) requires that space segment utilization charges

> "shall have the objective of covering the operating, maintenance and administrative costs of INTELSAT, the provision of such operating funds as the Board of Governors may determine to be necessary, the amortization of investment made by Signatories in INTELSAT and compensation for use of the capital of Signatories."6/

In essence then, there are two basic requirements regarding INTELSAT's charging practices. First, once a service (or "type of utilization") has been defined, there shall be uniform pricing for that type of space segment utilization, and second, prices charged must cover costs (in the aggregate) and return on capital.

INTELSAT has, in practice, demonstrated significant flexibility in establishing prices for individual services. Much of this flexibility is due to the fact that the Agreements do not require charges for an individual service to cover the costs of providing that service. Costs for individual

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6/ More specifically, INTELSAT's Legal Advisor points out that principles established by the Meeting of Signatories provide that charges shall "as far as practicable, reflect the cost to INTELSAT of making available the space segment capacity provided for the purpose of the type of utilization in question." INTELSAT Legal Memorandum, p. 3.

services are allocated with considerable flexibility since the principles established by the Meeting of Signatories require only that aggregate costs be covered. This practice provides INTELSAT a powerful tool for meeting competitive challenges from proposed separate systems.

The conclusion of INTELSAT's own Legal Advisor, based on a broad assessment of INTELSAT's flexibility, provides:

- There is no absolute requirement that utilisation charges for a particular type of utilization must recover the cost of making that type of utilization available. Rather, cost recovery is an objective to be met, "as far as practicable" in each specific case, taking into account all the relevant factors including market and business considerations.

- While all users must be charged the same rates for the same type of utilization, the Board has significant discretion to define different types of utilization on the basis of operational parameters, including voice, TV, data, power, bandwidth, type of transponder, degree of protection, role of the satellite to be used, etc.

INTELSAT's Assessment of Pricing Flexibility

The summary conclusion of the Legal Memorandum prepared by INTELSAT's Legal Advisor demonstrates a considerable degree of pricing flexibility, to wit:

> "In establishing utilization charges, the Board of Governors has significant flexibility in determining the extent of cost recovery for each type of utilization and in defining types of utilization for which different charges may be set. ..."[7]

Thus, the assessment of INTELSAT's own Legal Advisor is that the organization has considerable flexibility. We concur with these conclusions and believe that this existing flexibility will enable the organization to meet the challenge of competing satellite systems. As we show in the following section, INTELSAT is, in practice, actually implementing new methods of responding to a changing market structure.

On January 4, the Director General of INTELSAT issued a document entitled Legal Opinions Concerning the Determination of INTELSAT Space Segment Utilization Charges.[8] It contains the Legal Memorandum prepared by INTELSAT's Legal Advisor, and responses by three separate U.S. law firms to a single, carefully tailored question pertaining to pricing flexibility.

7/ INTELSAT, "Legal Memorandum. The quote concludes by noting, "...A type of utilization may be defined on the basis of a wide range of operational parameters (including technical elements, role of the satellite to be used, the degree of protection given, etc.), but not on the basis of who the users are, i.e., on an individual link basis or on a geographic basis." It is on this last point that the bulk of attention on pricing flexibility seems to be focused, though it is only a very small part of any assessment of INTELSAT's ability to compete.

8/ Assembly of Parties Document AP-9-18E, Contribution of the Director General.

In contrast to the broader assessment upon which the INTELSAT Legal Advisor's conclusions are based, each of the three consulting law firms was requested to address the following very specific question:

> "Is it legally possible for INTELSAT, consistent with the INTELSAT Agreement, and acting through the Board of Governors, to adopt one charge for a digital integrated business service with a medium capacity bit stream of 768 Kbps between earth stations in the U.S. and the United Kingdom and a different charge for a digital integrated business service with a medium capacity bit stream of 768 Kbps, identical in all other respects, between earth stations in the U.S. and Nigeria?"

Each concluded that it is not legally possible to adopt different charges in this narrowly crafted example.[9/]

It is difficult to see how this example and the conclusions drawn from it provide convincing support for the view that INTELSAT lacks sufficient pricing flexibility, even as between routes or among regions. INTELSAT has broad authority to respond to market conditions in deciding which services it will provide to which markets. Not every new service devised to serve the needs of a particular market or devised to meet a competitive challenge will be offered immediately on a global basis or even on all routes of a given region. In the words of INTELSAT's Legal Advisor:

> "INTELSAT's practice and the action of the Board also support the view that all services need not be offered in every ocean region so long as they are provided on a non-discriminatory basis to all users."[10/]

9/ Letters to INTELSAT Legal Advisor from Arnold and Porter, December 13, 1984; Wiley & Rein, December 19, 1984; and Ginsberg, Feldman and Brese, December 19, 1984.

10/ INTELSAT Legal Memorandum, p. 11.

A question more germane to the issue of INTELSAT's flexibility to compete would have addressed INTELSAT's practice of defining services, and setting charges, on the basis of small differences in capacity, lease term, or a variety of other factors.

Were the hypothetical example posed by INTELSAT to its outside counsel as follows:

> "Is it legally possible for INTELSAT, consistent with the INTELSAT Agreement, and acting through the Board of Governors, to adopt one charge for a digital integrated business service with a medium capacity bit stream of 2,048 Kbps between earth stations in the U.S. and the United Kingdom and a different charge for a digital integrated business service with a medium capacity bit stream of 768 Kbps, identical in all other respects, between earth stations in the U.S. and Nigeria?"

with a change only in bit rates of one of the services, the response could only be that adopting different charges for the services so defined would be consistent with the INTELSAT Agreement, as they would indeed be different services. In fact, INTELSAT already charges differently for these two services.[11/]

Thus, if new entrants started competing for US-UK business services, INTELSAT might respond by reducing charges for its 2,048 Kbps service, leaving charges for the 768 Kbps service

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11/ See the table on page 17 below.

unchanged. Decisions regarding which routes or geographic regions would then be served by the higher bit-rate service at the reduced charges would presumably be made on the basis of competitive strategy and demand conditions existing in various markets, both of which are acceptable criteria under existing practices and policies.

In view of the above considerations, the constraint highlighted by INTELSAT's three consultants' opinions is of questionable significance in assessing the basic issue of whether or not the organization has the necessary flexibility to compete.

Of greater significance is the fact that INTELSAT has established the Working Group on INTELSAT Charging Policy which met for the first time on March 19-20, 1985. The Group's objective is to develop general principles that would underlie a charging policy. This will entail a comprehensive review of INTELSAT's existing charging policy and the establishment of a new charging policy if required. The first of seven principles upon which it is proposed to base further work of the group is that charges shall be consistent with the INTELSAT Agreements and equitable to all Signatories. We strongly support this effort to achieve competitive pricing and concur with the reasoning behind it -- that the organization has within its current charter the flexibility to consider a range of charging policies.

INTELSAT's Flexible Pricing Practices

INTELSAT Business Services

One example of current and past practices that demonstrate existing flexibility in offering new services and adopting a variety of charges is INTELSAT Business Services (IBS). IBS is an integrated digital service for voice, data, and video designed to facilitate a wide variety of business applications. The service offers a range of transmission bit rates from 64 Kbps to more than 8 Mbps. Full and fractional transponder leases are available and the service is provided on a non-preemptible basis for full-time, part-time or occasional use.

The accompanying table, reproduced from an INTELSAT publication entitled "New Services, January 1985" illustrates the wide variety of prices set for IBS, with 45 different charges varying according to bit rate and service period covered.[12/] Transponder lease charges (12 different charges) vary according to bandwidth and lease period.

The criteria considered in establishing this menu of rates reflect a full appreciation by INTELSAT of the need to respond flexibly to market conditions. In the same INTELSAT publication it is noted that for IBS:

12/ See the table on page 17 below.

> "tariffs are designed to encourage and promote the utilization of the service and include progressive discounts to reflect the efficiencies of long-term lease of high capacity resulting in increased space segment utilization over the lifetime of the satellites. The tariffs will ensure that IBS is provided on a commercial basis, taking account of the cost to INTELSAT of providing the service and its value to the users. ..."

The basic principles underlying charges for IBS were described in INTELSAT Board of Governors' document BG-62-24 in March of 1985. IBS tariffs were designed:

- to be consistent with other INTELSAT charges (although this was only a goal, since some IBS services were not considered comparable with other INTELSAT services).

- to promote the service while making a "substantial contribution" to common costs, although not necessarily cover fully allocated costs.

- to ensure that part-time and occasional use charges would be set so that total revenue earned would be approximately equivalent to that from full-time capacity as well as covering higher administrative costs associated with part-time services.13/

The second point (emphasis added) provides a clear example of the flexibility INTELSAT has demonstrated in pricing individual services. For IBS, INTELSAT's present pricing policy imposes no constraint requiring prices to be set so that revenues cover fully allocated costs. It can be concluded that other services provided by INTELSAT can be used to subsidize

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13/ INTELSAT Charging Policies, A Historical Overview, Contribution of the Director General, 8 March 1985, p. 22.

IBS services at least for periods during which market position is being established or competitors are being challenged. Such cross subsidies can be a powerful tool in competing with other entities.

A Variety of Service Offerings

The INTELSAT Business Service was selected as only one case illustrating the organization's flexibility to respond to market conditions and to potential competitive threats by new satellite entrants. New INTELSAT services, operating or proposed, that also permit a wide range of tariffs and promotional strategies include INTELNET I, a point-to-multipoint data broadcast distribution service using small receiving earth stations connected with public networks or user premises; INTELNET II, permitting uplinks from small terminals; video services such as leased international television services; digital TV distribution services; cable restoration services; planned domestic services; and VISTA, a new service to provide basic satellite communications facilities for rural and remote communities presently having inadequate or no telecommunications facilities[14/].

INTELSAT's flexible charging and innovative cost allocation practices clearly demonstrate INTELSAT's potential for responding to competitive challenges.

14/ See generally, INTELSAT New Services, January 1985.

Comments of The U.S. Signatory

In addressing itself to the issue of separate systems, the Communications Satellite Corporation, the U.S. Signatory to INTELSAT, believes that:

> "with respect to pricing flexibility, COMSAT, working with its INTELSAT partners and within the framework of U.S. domestic law, can have substantial latitude to respond to competitive challenges."15/

COMSAT points out that it is the Signatories that set prices for services provided to their customers via the INTELSAT system, and:

> "it is the Signatories that will be competing with any separate satellite systems that are authorized."16/

This point is significant. As the SIG White Paper points out:

> "... INTELSAT's charges constitute only part of the end-user price for service. Significant changes in end-user prices are thus dependent on action by its Signatories (or, in the United States, by COMSAT and terrestrial carriers such as AT&T)."17/

15/ Comments of Communications Satellite Corporation, before the Federal Communications Commission, in the matter of: Establishment of Satellite Systems Providing International Communications, CC Docket No. 84-1299, April 1, 1985, p.v. (referred to subsequently as "COMSAT filing").

16/ COMSAT filing, p. 62. COMSAT does warn, however, that its latitude to respond to competitive challenges "assumes, ..., that the Commission will not allow the operators of separate systems to use the Commission's rate regulation process to hamstring COMSAT's ability to compete in the market for satellite services." p. 63.

17/ COMSAT filing, p. 28.

Even were INTELSAT's charges to be reduced to zero, there is no assurance this would necessarily result in lower prices to the end user, enabling INTELSAT to compete more effectively.

Thus, while INTELSAT has demonstrated its flexibility to compete, its success in meeting any competitive challenges will be determined to a large extent by the pricing strategies adopted by the Signatories to meet their own national objectives.

Additional INTELSAT and Market Considerations

In addition to INTELSAT's flexibility in adopting services and setting charges, there are other factors related to the organization's unique market position that contribute to its capacity to respond to competitive challenges.

INTELSAT's Unique Market Position

The INTELSAT system embodies economies of scale and scope not available to new entrants, and INTELSAT enjoys a breadth of coverage today that new satellite systems could not hope to replicate. In addition, INTELSAT's vast excess space segment capacity can act as a barrier to entry. The high quality of INTELSAT service offerings and the "good will" developed world-wide by providing years of high-quality service will make

the organization a formidable competitor, enabling it to compete through product differentiation by boasting an excellent track record and offering considerable technical expertise in advisory and support functions. Finally, because INTELSAT's 109-nation members are owners as well as users, INTELSAT has a unique market position and enormous market power. New entrants will find, in many countries, they are competing for revenues with the user they wish to serve.

Constraints on New Entrants

One of the primary goals in the Executive Branch findings on separate satellite systems was to avoid significant economic harm to INTELSAT. To accomplish this, potential new entrants are restricted to providing services not interconnecting with public-switched message networks. Existing separate systems of other countries face no such limitations. The U.S. restriction is intended to protect the large majority of INTELSAT revenues from competition by separate transoceanic satellite systems. The constraint imposed on potential U.S. entrants is obvious and significant, leaving open only the emerging, highly competitive international market for customized business services and video.

INTELSAT, however, faces no constraints upon the international public telecommuncations service markets in which it may wish to compete. On this point, it is the potential U.S. entrants rather than INTELSAT who lack flexibility to compete.

Special Considerations for Policymakers

There is an appreciable risk that opening the INTELSAT Agreements in the name of pricing flexibility would invite unwanted changes in other important provisions of the charters. While the United States Government maintains its strong support for INTELSAT and for INTELSAT's role as "a single global commercial telecommunications satellite system as part of an improved global telecommunications network," others, both domestically and internationally, may want to challenge the precepts and assumptions upon which the existing Agreements are based. The effect that such views would have on a renegotiation of the Agreements is not at all clear.

Furthermore, changes affecting charging policy for individual routes and geographic regions would hold an undesirable symbolic significance. One of the most highly publicized reactions to the prospect of separate international communications satellite systems serving the Atlantic region is the fear, expressed by many member nations, that their rates would rise steeply because of INTELSAT's loss of revenues through competition. Under the criteria established by the Executive Branch which prohibit new entrants from interconnecting with public switched networks, the large majority of INTELSAT revenues would be protected, significant economic harm

to the organizaton would be avoided, and dramatic increases in any members' INTELSAT charges would be an unlikely consequence.[18]

Any change in future rates, up or down would, in any event, apply to all members for a given, narrowly defined, service under the current Agreements. If the Agreements were to be modified, it is quite possible that users in different geographical regions would pay different prices for identical services, with the lower traffic volume areas (such as the Pacific Ocean area) paying the higher price. Furthermore, INTELSAT could simply decide to not offer some services in some areas, even if users requested the service.

Additionally, changing the Agreements now, before any real need has arisen, sets an undesirable precedent of modifying a viable treaty document on the basis of unsubstantiated, purely hypothetical arguments.

Summary

INTELSAT's ability to compete must be evaluated by criteria that go beyond pricing flexibility in its narrow meaning. Additional criteria include: pricing flexibility among service

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[18] See, for example, "INTELSAT Economics" Summary Analysis, U.S. Department of Commerce, National Telecommunications and Information Administration, April 3, 1985.

offerings, product differentiation, quality of service, track record and expertise, available excess capacity, accumulated "good will", support facilities, market position and strength, and economies of scale or scope.

The summary conclusion of the Legal Memorandum prepared by INTELSAT's Legal Advisor is supportable and demonstrates a considerable degree of pricing flexibility, to wit:

> "In establishing utilization charges, the Board of Governors has significant flexibility in determining the extent of cost recovery for each type of utilization and in defining types of utilization for which different charges may be set. ..."19/

Any focus solely on INTELSAT's ability to vary its charges is misleading. In virtually all instances, INTELSAT's charges constitute but a fraction of the overall circuit price. Even were INTELSAT's charges to be reduced to zero, there is no assurance this would necessarily result in lower prices enabling INTELSAT to compete more effectively. If Signatories were to align end-user prices more closely to INTELSAT's charges, or INTELSAT were to deal directly with end-users more widely, "pricing flexibility" might result in significant price variations. However, so long as INTELSAT remains insulated from end-users, which is likely to prove true in many nations

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19/ INTELSAT Legal Memorandum, p. 1.

for some time, "pricing flexibility" is not necessarily the key to INTELSAT's commercial expansion in an increasingly competitive world communications market. Rather, INTELSAT's ability to compete successfully will be directly related to the individual Signatories' pricing strategies.

Opening the INTELSAT Agreements for renegotiation with the aim of permitting price differentiation for a specified narrowly-defined service offering on the basis of who will utilize the service (on an individual basis) or the geographic location of users is unnecessary. The effect of such a change would be negligible in augmenting INTELSAT's current strong ability to compete, and could be detrimental to some countries.

Given these considerations, there is little justification for opening the Agreements for renegotiation. INTELSAT's current overwhelming market power and its currently available flexibility in pricing obviate any need to modify the Agreements.

Mr. DINGELL. Do you have any economic analysis on this point at the State Department?

Mr. SCHNEIDER. Economic analysis on the——

Mr. DINGELL. On the point of the adequacy of Intelsat pricing flexibility to meet the competition that will be allowed by the changes that the administration has recommended to the FCC.

Mr. SCHNEIDER. It sounds like your question is a legal argument, not an economic question.

Mr. DINGELL. I am asking for two things that interact in this. One is the legal analysis, and the second thing is the economic analysis. I have asked you for the legal analysis. I am now asking you for the economic analysis.

Do you have any economic analyses or studies on this point?

Mr. SCHNEIDER. I'm still not sure if I understand the problem. If they have the legal authority within the existing articles to flexibly price their services, then that would argue that they could get into this market.

Mr. DINGELL. What you are telling me is that you do not have the economic analysis on this point.

Mr. SCHNEIDER. What I am telling you is, I do not understand how this question of economic analysis is relevant to the question.

Mr. DINGELL. Let me just ask you, do you know what an economic analysis is?

Mr. SCHNEIDER. Yes, sir.

Mr. DINGELL. What is it?

Mr. SCHNEIDER. It is a study of the economic consequences of allocation of resources.

Mr. DINGELL. I think that is an excellent definition. Do you have anything like that in connection with the State Department and the Administration's position on the matter of competition for Intelsat?

Mr. SCHNEIDER. In terms of the notion of competitive satellites, yes, we have studied the economic issues relating to separate systems.

Mr. DINGELL. Would you submit those to us, please, so we can look at them?

Mr. SCHNEIDER. Yes.

Mr. DINGELL. Have you at the State Department studied the effect that the Administration's position would have on the U.S. telecommunications industry?

Mr. SCHNEIDER. The State Department has not been directly concerned with that portion of it. The Department of Commerce has done that in the interagency body.

Mr. DINGELL. Have you at the State Department performed studies of what impact this recommendation would have on U.S. telecommunications manufacturers?

Mr. SCHNEIDER. The same response, Mr. Chairman.

Mr. DINGELL. I find it very interesting that you appear to be making the policy and the Department of Commerce is conducting the studies. I would assume that it would be done in somewhat different fashion—that the agencies conducting the studies would be making the policy.

And I find a little confusion in the Administration on this particular point.

Mr. SCHNEIDER. Mr. Chairman, we have an interagency entity to do this, because telecommunications is a subject that is sort of like energy. It gets into the interests of almost every agency of Government, and so the Commerce Department has contributed its economic analyses as part of the overall governmental determination on this subject.

Mr. DINGELL. Who is making the policy, the State Department or the Commerce Department?

Mr. SCHNEIDER. It is a governmentwide policy.

Mr. DINGELL. Governmentwide policy?

Mr. SCHNEIDER. Yes.

Mr. DINGELL. And who is making the governmentwide policy, the State Department or the Commerce Department?

Mr. SCHNEIDER. It is made jointly. All of the agencies of Government that are interested in the subject.

Mr. DINGELL. I apologize for exceeding my time, Mr. Chairman. I have always understood that the State Department represented this country abroad, and that the policy it presented to the rest of the world was made by the other Departments. It appears that this administration functions differently.

Thank you, Mr. Chairman.

Mr. WIRTH. Thank you, Mr. Chairman.

Perhaps Mr. Markey might follow up and answer a similar set of questions to see what the Commerce Department has in this area.

Have you looked at the issue of pricing flexibility, or talked to Intelsat? Do you have available documentation on the subject of pricing flexibility?

Flexibility is obviously a key issue. We don't want to get into a situation where Intelsat would perhaps, as a result of competitors, drop their price for a particular service so dramatically on one route that it might lead to dramatic rate increases for other people around the world.

But if Intelsat already has the pricing flexibility and can use that, that kind of deaveraging should not be a troublesome issue.

Mr. MARKEY. Mr. Chairman, when the President made his decision, he felt there were two areas that ought to be looked at to make sure that Intelsat could continue to compete in the so-called customized services.

One was the so-called direct access issue, which we decided among us would be handled by the Department of Commerce. We have done so by filing a petition at the Commission to increase direct access to Intelsat.

Under our agreement with the State Department in dividing up responsibilities here, State has the responsibility of interpreting the treaty. So we have not done an analysis with respect to the pricing flexibility.

We have done some economic analysis with respect to significant economic harm.

Mr. WIRTH. We will come back to that. But on the question of flexibility, have you gone to Intelsat or asked them for information? Have you asked them for analyses they may have on pricing flexibility?

Mr. MARKEY. We have been provided with several opinions that they have received from outside counsel concerning pricing flexibility.

Mr. WIRTH. What do those opinions suggest?

Mr. MARKEY. They suggest, as you might expect, that they do not have enough.

I must say, my people, when they look at this issue—and again, we have not done an indepth study—inform me that there are a number of instances where Intelsat has had an opportunity to price their services in a very flexible way. And we would be happy to try to provide you with some of those examples, because it seems they indicate that they do have a great deal of flexibility, even though, as I say, it was not our determination.

Mr. WIRTH. You are saying that you have information from Intelsat which suggests that they already have significant pricing flexibility?

Mr. MARKEY. It seems significant to me. I suspect people can differ.

Mr. WIRTH. Intelsat thinks they have the pricing flexibility? They are the ones who are worried about this. If that is already the case, then what are we concerned about?

Mr. MARKEY. I don't think they think it is sufficient, but when we look at the documents, we think it is.

Mr. WIRTH. Can we get those documents for the record?

Mr. MARKEY. We will try to do that. As you know, some of those documents are restricted. I don't know whether we can put them in the record or not. We will ask.

[The documents referred to by Mr. Markey may be found at p. 198.]

Mr. WIRTH. We could get our staffs to work together. You might also get Mr. Schneider's input on this subject. It seems to me that pricing flexibility and significant economic harm are the two big issues, and we have to better understand them.

Mr. Schneider, you wanted to respond.

Mr. SCHNEIDER. On page 7 of my testimony, there is a quotation from the legal advisor for Intelsat that comments on the pricing flexibility. I would refer the committee's attention to that.

Mr. WIRTH. I don't think it is the determination of the President or anyone else that we get into a situation where price flexibility would be used in a way that would harm other users. That is certainly not my understanding of what the administration wants to do.

And it is my understanding as well that there can be a different interpretation of the price flexibility than simply deaveraging the rate for a particular service. If Intelsat already has the flexibility and if it is not the problem it is made out to be——

Mr. Fowler

Mr. FOWLER. I want to make one point that you touched on briefly at the beginning of your comments.

For 2 years now, Intelsat has known of these alternative satellite proposals. They can presumably at any time, when the Assembly of Parties meets, change the agreement in ways that they deem necessary to provide more flexibility. As I indicated to you, it would be several more years ultimately before any system could be oper-

ational, if indeed the Commission were to grant them. So even now they have time, if they want to change the Intelsat agreement because they feel it does not give them flexibility.

Mr. WIRTH. Let me move to the glut of capacity issue.

Is it the case that there are a variety of undersea cables that are already authorized or being built?

Mr. FOWLER. Yes.

Mr. WIRTH. Isn't the capacity of the undersea cables much greater than that of all of the competitors combined?

Mr. FOWLER. I am not sure what the comparisons are, but you are absolutely right. The new fiber optic cables have great capacity.

Mr. WIRTH. The answer is, "Yes, Mr. Chairman." Therefore, if there is all of this capacity and there is concern about glut, then it seems to me, if we want to save Intelsat, then the logical conclusion is that we outlaw the new undersea cables; isn't that right?

Mr. FOWLER. Right.

Mr. WIRTH. But we're not doing that?

Mr. FOWLER. That is correct. And there is no law that prevents the cables.

Mr. MARKEY. You go one step further to say that we outlaw new technology.

Mr. WIRTH. That argument has been made from time to time. We have been through a lot of that on this committee, as you know, Mr. Markey.

Mr. MARKEY. Yes, sir.

Mr. WIRTH. Is it the case that in proposing the service restriction on separate systems, the administration suggested that a great amount of Intelsat's revenues are derived from public-switched communications?

Mr. MARKEY. Yes, sir, it did.

Mr. WIRTH. The administration's proposal would protect about 80 percent of Intelsat's revenues?

Mr. MARKEY. That is the intent; yes, sir.

Mr. WIRTH. Given that fact, can you give me a sense of what the economic harm might be? Are there any studies of economic harm, given that we would protect 80 percent of Intelsat's revenues?

Mr. MARKEY. We have some estimates. It is a very nominal figure. The figure we came up with—and again, it depends on the assumptions you make here, and I would like to provide that to the members of the committee, so that they can look at the that we have made—it is a very low figure. We figure somewhere between 5 and 10 percent.

Mr. WIRTH. Is this a new study, Mr. Markey?

Mr. MARKEY. I do not want to call it a study. It is a summary analysis of the materials that we went through over the past year and a half. It is about a 10-page analysis that indicates the assumptions we made and what we think those assumptions would mean with respect to Intelsat and economic harm to Intelsat.

And again, I say that it turns out that it would be a very nominal figure, particularly when you figure that what happens with the Intelsat price in most of the lesser developed countries. is it marked up anywhere from 5 to 15 times, so that there is an awful

lot of mark-up at the local level. And when you factor that into it, it becomes a very small figure.

Again, that is with the assumptions we have made. And people can argue about assumptions that you make.

Mr. WIRTH. Your summary of all of the facts and figures would suggest that the economic harm is not, in the words of the law, significant?

Mr. MARKEY. Yes, sir. I think that is a fair statement.

Mr. WIRTH. Thank you very much.

Mr. Nielson.

Mr. NIELSON. I have no questions. I am interested in this topic, however.

If you would explain to me—it is not a question—but why does Intelsat insist that they not be able to provide switched communications service? Why would the President make that restriction?

Mr. SCHNEIDER. The motive for this, Mr. Nielson, is, in order to preserve the economic viability of Intelsat, which we are committed to by international agreement, that by denying new applicants the right to compete directly with the main revenue base of Intelsat, we can protect its economic viability while forcing new entrants to provide new services that are not currently provided, so the resources would not, in effect, be duplicative of an international system trying to compete, but instead apply the newly emerging technology to meet new needs that cannot be fulfilled by services that are connected to the public switched networks.

Mr. NIELSON. Is this an interim situation, so later they could get into the switched communication services? Do you think it might lead to that at some subsequent time?

Mr. SCHNEIDER. This anxiety has been raised. But the intention is not to allow competitors at any time in the future to go into the public switched networks, but to instead focus on new applications.

Mr. NIELSON. I apologize for not having been here. We were in a Health Subcommittee upstairs that has been going on since 9:45 this morning on the minor matter of Medicare and Medicaid.

But let me ask a question that I think Mr. Swift was just asking as I came in, and that is, what is the impact of this proposal on the other 107 countries? I understand the impact pretty much on this country. What is the impact on some of the smaller, less viable countries?

Mr. SCHNEIDER. The impact on the smaller countries with respect to the voice traffic that goes on the public switched network would be insignificant, because that portion of Intelsat's capability is protected by the recommendation of the President.

This provision of new services would provide, as the proliferation of new services arises on the scene, it could reduce the cost of communication between one country and the—any country and other developing countries which—because of the impact of high telecommunications costs on the costs of doing business in these countries, it could stimulate economic development in these countries.

Mr. NIELSON. Let me ask Mr. Markey one question.

Chairman Dingell asked the gentleman from the Department of State a question about economic analyses. He implied that the Commerce Department was doing them instead.

In doing the economic analyses, which I assume you are going to submit to the committee, do you take into account the State Department's objectives, and if so how?

Mr. MARKEY. Do we take into account their objectives?

Mr. NIELSON. Yes.

Mr. MARKEY. Yes, sir, we certainly do.

Mr. NIELSON. Do you look at the impact on the other countries as well in this analysis?

Mr. MARKEY. We look at it in a broad sense. We certainly have not looked at it in the case of each country.

Let me give you some examples, though, which might be instructive. The Intelsat charge right now for international voice data circuit via satellite to each side—it takes two participants here—would be about $390. The foreign half would cost, for instance, in the Philippines—they have marked that up to $9,500; $8,541 in Argentina; $5,087 in Kenya.

So what is happening is that they take the Intelsat price, and then they increase that price to provide some of their own needs, financial needs, and most of the markup is being paid, I think, by American users for the most part. So we really are subsidizing them. We are not just subsidizing service. We are subsidizing, in some cases, their telecommunications infrastructure.

I do not mind us helping developing countries, but it seems to me we are now at a point where it is time to give American users a break through use of American technology.

We have a very strong deficit in trade, and if there is some way we can help bring that deficit down by providing our users with new technology to satisfy their needs, we ought to be doing it.

Mr. NIELSON. Thank you, Mr. Chairman.

Mr. WIRTH. Thank you, Mr. Nielson.

Mr. Swift.

Mr. SWIFT. Thank you, Mr. Wirth.

Returning to rate flexibility, doesn't rate flexibility that means anything have to be on a route-by-route basis? Or doesn't rate flexibility, to be effective, have to be on a route-by-route basis?

Mr. SCHNEIDER. Rate flexibility, we think, is most appropriately seen in the context of service-by-service rather than route-by-route. The Intelsat agreement provides for—provides the same prices for the same service on a worldwide basis.

The proposal that the administration is making is that this practice be continued. If new services are offered, for example on the North Atlantic route, then Intelsat, we believe, has the pricing flexibility to offer a competitive price for that new service without affecting any of the other services that it offers or the prices for the other services. We think the flexibility that is built in to the existing Intelsat articles is adequate to allow them to compete without undermining their revenue base that sustains the voice communications through the public switched network.

Mr. SWIFT. I gather that you agree that they do not have flexibility on route-by-route ratesetting.

Mr. SCHNEIDER. That is my understanding, yes.

Mr. SWIFT. The chairman asked you a question about an economic analysis, and said you understood why a legal analysis was needed, but not why an economic analysis was.

When Secretary Baldrige wrote to Secretary Schultz last November, he said the submission to the FCC should express a very clear position on pricing flexibility for Intelsat. But the SIG report does not address that issue.

In fact, what you said in your statement today was that Intelsat has a great deal of flexibility, which presupposes that you have decided what is enough flexibility.

Now how do you determine what is enough flexibility, if you do not have an economic analysis?

Mr. SCHNEIDER. Because we believe the flexibility is complete in the sense that Intelsat can offer any price it chooses to meet competitors for new services, consistent with non-predatory pricing practices. The flexibility is, by definition, sufficient to cope with competition.

Mr. SWIFT. In your judgment.

Mr. SCHNEIDER. Yes, because the flexibility is infinite.

Mr. MARKEY. May I comment on that?

Mr. SWIFT. Certainly.

Mr. MARKEY. What I don't understand, if Intelsat really believes that they do not have sufficient pricing flexibility, is why don't they come forward with a proposal to change those parts of the Intelsat agreement and give us an opportunity to look at them?

I do not think we have locked ourselves in stone in any of these.

Mr. SWIFT. I do not think that is an unreasonable suggestion at all. I presume by that that you would be supportive of a reasonable proposal to provide route-by-route pricing flexibility for Intelsat.

Mr. MARKEY. I think we would at least have the chance to look at what they think they feel they need to have sufficient pricing flexibility. We could then make a determination.

Right now, we have to prove a negative. When we look at what they've done in the past, when they have gone in and dickered over business with some users, it seems to us they have been able to be very flexible in the prices they have given to them. If they do not consider that enough, I think it would be very interesting to us at the Commerce Department—I do not want to speak for the State Department—to see what further changes they feel they absolutely have to have to be able to compete, because we want them to be able to compete. We do not want to keep them out of the business.

Mr. SWIFT. I am pleased with that flexibility on the part of the Commerce Department.

Would the State Department be supportive if concern were expressed by Intelsat for additional rate flexibility?

Mr. SCHNEIDER. Intelsat can, at any time they choose, within the terms of the existing articles, make the changes they deem necessary. The fact that they have not chosen to do so in the past 2 years indicates that they agree with their legal advisors, that they have sufficient price flexibility to deal with the circumstances, at least as they see them.

Mr. SWIFT. You are going to provide the economic analysis that the chairman asked for so that we can find out what flexibility means and what enough is, and some of those kinds of things?

Mr. SCHNEIDER. Yes, as I said, we will provide our documentation.

Mr. WIRTH. I would like to follow up on the flexibility issue. Price flexibility can be on a routing basis, but it can also be on a technology basis; isn't that right?

Mr. SCHNEIDER. Service basis. Mr. Chairman, if I could, the idea of having discriminatory pricing as between different routes would strike at the heart of Intelsat.

Mr. WIRTH. I want to come back to that as an additional issue. If you talk about price flexibility solely on a route-by-route basis, would not be a full and fair definition of what is meant by flexibility.

Mr. SCHNEIDER. That is correct.

Mr. WIRTH. Doesn't Intelsat currently price also on the basis of, for example, whether or not one uses a big dish or a small dish? Isn't that right?

Mr. MARKEY. I think that is correct.

Mr. WIRTH. And they also set their rates according to whether one is using a transponder on a full-time basis or a part-time basis; isn't that right?

Mr. SCHNEIDER. Yes.

Mr. WIRTH. Intelsat has all kinds of pricing flexibility depending on what kinds of technologies are being used and what kinds of technology Intelsat has chosen to encourage; isn't that right?

Mr. SCHNEIDER. That is correct. As I said to Mr. Swift, the flexibility is infinite.

Mr. WIRTH. It seems to me they already have a lot of flexibility built into the way that they price today. They are pricing some things to encourage certain technologies; isn't that right?

Mr. SCHNEIDER. That is correct.

Mr. WIRTH. Therefore, when we talk about flexibility of pricing, we could conclude that it already exists.

Mr. SCHNEIDER. That is correct, Mr. Chairman.

Mr. WIRTH. I would hope the documents you provide us, Mr. Markey, would give us an opportunity to look at that in greater detail, and determine whether Intelsat itself believes it has this flexibility.

If I could ask you, Mr. Schneider, going back to your point earlier, are there foreign policy ramifications that might flow from any U.S.-initiated effort to change the Intelsat agreement to allow for deaveraging?

Mr. SCHNEIDER. That is certainly one of the concerns that we would have about a change in regulations. It is not unlike concerns that people would have about changing the Constitution. It can raise many other issues that are—that could strike at the heart of the concept of Intelsat which is the notion of global average pricing, or the same pricing for the same service on a worldwide basis.

Therefore, it would be—it could be unsettling to change the rules.

On the other hand, because we believe that they have sufficient flexibility within the existing rules, we do not see that the notion of having to change the rules comes up.

Mr. WIRTH. There could be serious foreign policy implications if you got into a situation where, assuming that Intelsat wanted to drop its rates in areas that were heavily used, like above the North

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Atlantic, they then dramatically increased their rates in areas that are more sparsely used, say in the South Atlantic.

Mr. SCHNEIDER. Absolutely.

Mr. WIRTH. That would then be the Third World countries effectively subsidizing Europe and the United States.

Mr. SCHNEIDER. That is correct, and they have spoken on this issue already, Mr. Chairman.

Mr. WIRTH. And we do not want to see that sort of thing happen.

Mr. SCHNEIDER. Certainly not.

Mr. WIRTH. Isn't that part of the determination by the State Department, that you would fence that particular capability and not allow it to happen?

Mr. SCHNEIDER. That is correct, and that was behind the President's motivation in preserving the integrity of Intelsat and its economic viability.

Mr. WIRTH. Let me move to a different foreign policy issue. Somebody is going around stirring up a lot of other countries, saying:

> Oh, woe, the United States is going to lower its prices across the North Atlantic among the developed countries. The developed countries are going to get together and discriminate against the less-developed countries, and that is not a good thing to do.

Mr. SCHNEIDER. That is correct.

Mr. WIRTH. That is one of the arguments that is being made against competition. To counter that, I would suspect the State Department must be undertaking efforts to go around to the other nations and explain to them what the policy is all about and why we are doing it.

Mr. SCHNEIDER. Yes; that has been one of our major activities since the Presidential determination in November of last year.

Mr. WIRTH. It doesn't sound to me like you have been very successful in doing this.

Mr. SCHNEIDER. On the contrary. If I could go through the time sequence, why I think this problem has emerged and how we are addressing it.

Mr. WIRTH. Maybe you could say that and let me go back to Mr. Swift and then come back on my time. Mr. Swift has some other questions.

Mr. SCHNEIDER. OK.

Mr. SWIFT. Thank you, Mr. Chairman.

Sure, there is Third World concern about rate increases by Intelsat. That is my concern. I just do not find it very persuasive that this other rate flexibility you say is there is going to protect the Intelsat from the cream skimming we have seen occur in the telephone system here in the United States.

I did, I think, hear the chairman draw from you the fact that the State Department would oppose any request by Intelsat for route-by-route rate flexibility. Is that what I heard you say?

Mr. SCHNEIDER. That would change the character of Intelsat. We would oppose it.

Mr. SWIFT. Thank you. That is very interesting.

Mr. Markey, you stated that virtually no economic communications policy, trade, defense, foreign policy or regulatory topics have not been carefully scrutinized in preparing what became this SIG

report. And I continue to draw these parallels with our domestic telephone situation, which some people think is wonderful; I do not know of any consumers who think it is wonderful; there are theoreticians who think it is wonderful. In the domestic telephone situation, competitive long distance carriers were at first limited to providing specialized long distance services to large businesses.

Then we discovered that these domestic competitors could not be profitable unless they are able to connect into the public switched telephone network. And, now, this ominous parallel. We are—internationally—proposing to allow competition. But limit it to specialized services to large businesses.

That did not work domestically. The first question is why do you think that is going to work internationally?

Mr. MARKEY. It is a totally different situation. First of all—well, I respectfully disagree with you. I have a paper here that I would like to give to your staff dealing with the restrictions that have been proposed on these new entrants.

When you look at the international situation and you look at how, particularly in Europe, how strictly those PPT's control their communications facilities, we are not dealing with a situation like we have in this country. I think that is a major difference.

Rather than us being able to make a unilateral decision that we are going to open up the whole ball game to competition, we cannot do that. We would have to rely on other countries who would want to do the same thing.

Now I am not going to tell you that there is never going to be a time that might not be in the interest of everybody. It could be. I don't know. I am not one of those people that thinks that just because you have got an organization and it has been successful, that it is going to be successful 30 years from now. I don't know that. I don't think we want to lock ourselves into that.

Mr. SWIFT. Aren't we getting back to the problem of trying to put toothpaste back into the tube? The examples—and there are not many in our society—in which we permitted people to get into something and then changed policy and drive them back out. Once they are in, they are in.

Mr. MARKEY. I would agree with that.

Mr. SWIFT. Once we start this, we have started it. There is no retreat. If the judgment you are making is wrong, we are stuck with it. It seems to me if we let people in and find out that as limited as we permitted their entrance in the first place to be, it does not make them economically viable, then it will not be long before we are going to be saying we have to reduce some of the restrictions in order to permit them to survive. And then we are down a road that is exactly analogous to what happened to us here in our domestic telephone system.

Mr. MARKEY. If it goes like that, I would agree with you. All I can tell you is that our intention—at least I can speak for the Department of Commerce—is that we have made it clear to these people that you had better not come back 2 years from now and say we cannot make it under these restrictions. We are not about to change them.

Mr. SWIFT. I don't have any faith that you can hold that line. What studies have you done to determine the amount of specialized

services that will be generated by the new competitors? Have you got that information?

Mr. MARKEY. As I say, I think some of that was in our white paper. It is very hard to predict those kinds of things, but at the Department of Commerce we do make some projections as to traffic in the future. I have talked to my engineers and they think and they tell me that the services that these people are proposing to put into place are services that Intelsat just does not provide right now. And that fact, I think, is going to encourage a great deal of traffic.

Mr. SWIFT. Mr. Chairman, I am right in the middle of a line of questioning, and I ask unanimous consent for 2 additional minutes. I want to get to the new services a little later on.

Do you have any studies on how much revenue the new competitors will need to be economically viable?

Mr. MARKEY. I don't.

Mr. SWIFT. Does anybody?

Mr. MARKEY. I don't know if that is our concern. Our concern here is to get Government out of the way of using American technology to supply American users. We are not going to guarantee them that they are going to be successful. I think they are going to have a very tough road.

Mr. SWIFT. What studies do you have that show any information as to whether the new systems will have enough business to survive without some of the restrictions that are currently being proposed being lifted?

Mr. MARKEY. I don't have any.

Mr. SWIFT. If I understand you correctly, we have not predicted the amount of specialized services that will be generated by the new competitors. We do not know what revenues they need. We do not know whether there is enough business for them to survive. But I believe you agreed with me earlier that once we open some field of endeavor in our society, we do not shut them out.

Now what I am suggesting is that you are moving into this area with admittedly no information that tells you, you are not going to have to try and stuff the toothpaste back into the tube.

The point the gentleman from Louisiana made, I thought, an hour and a half ago or so.

Thank you, Mr. Chairman.

Mr. WIRTH. Mr. Markey, when a computer company starts in silicon valley, do you do a study of the economics of the company to see if they can survive?

Mr. MARKEY. No, sir.

Mr. WIRTH. Do you do a study of the market to see if there are too many computers out there?

Mr. MARKEY. No, sir.

Mr. WIRTH. And if there get to be too many computers in the marketplace or too many computer companies, what happens to them?

Mr. MARKEY. They go out of business, I assume.

Mr. WIRTH. They take a shot at a certain part of the market. If it works, fine; if it doesn't work, what happens? They go belly up; right?

Mr. MARKEY. That is the American way.

Mr. WIRTH. That's what I thought.

Mr. SWIFT. Would the chairman yield?

Mr. WIRTH. I would be happy to yield.

Mr. SWIFT. You are not suggesting that an industry that has never been regulated, one totally free of government regulation, a free enterprise system, is analogous to what the gentleman from Washington was talking about, are you?

Mr. WIRTH. No. I'm talking about Procter & Gamble and toothpaste.

Mr. SWIFT. Good.

Mr. WIRTH. Mr. Schneider, do you want to fill us in a little bit more on what the State Department has been doing to calm the fears of some of the other participants in Intelsat?

Mr. SCHNEIDER. Yes, Mr. Chairman. Thank you for offering me an opportunity to do this.

If I may just offer a brief characterization of the sequence of events, because I think that has influenced how this problem has evolved.

When the applications were originally filed by the sponsors of separate systems, speculation began to circulate in the press, and this certainly covered the year-long period in which the Government was studying the matter. A good deal of sensational although inaccurate press coverage ensued.

And the press coverage resulted in a number of comments in the form of letters and other representations by foreign governments expressing apprehension about the notion that the United States was simply going to ignore Intelsat and license systems competitive to Intelsat.

This sort of undermined the interests in global average pricing, for example, that many of the developing countries had an interest in.

When the President made his determination in November of last year the Department immediately went to work on the individual countries, going back to—through our posts abroad, in the first instance to acquaint people with the character of the President's decision, the restrictions that were being placed on it by the President's proposal, and underscoring the U.S. concern for the viability of Intelsat.

We followed this up by bilateral meetings in countries with a number of Intelsat signatories and we will be continuing to do this on an ongoing basis for the foreseeable future to continue to work on this problem.

As a consequence, I think the initial efforts bore fruit, because by the time we got to the Assembly of Parties in January of this year, the parties basically now adopted a wait and see attitude. There was not the kind of jumping to conclusions that we saw prior to November, prior to the President's decision.

I think we are on the right track, but it does require continued efforts.

Mr. WIRTH. I would suggest from all that I have heard in the last 2 or 3 months that perhaps you might want to increase that effort quite significantly, as I think there is an enormous amount of confusion out there. And if I were to weigh the amount of argumenta-

tion, you are on the losing side of that—in terms of volume—and the State Department ought to renew its efforts.

Mr. SCHNEIDER. It does take a considerable amount of time to get this around. There are 190 signatories that we have to get to. The FCC has not completed its process. We have a couple of stages to go through before the matter can be completely laid out to the foreign countries.

Mr. WIRTH. You can certainly get out to 109 embassies or whatever information as to what the U.S. Government's position is, so that no matter what the FCC comes up with, we as a country are not embarrassed or misunderstood or whatever.

Mr. SCHNEIDER. We are doing that, Mr. Chairman.

Mr. WIRTH. I appreciate that, and I hope that you will continue to do so.

Mr. Swift, do you have more questions of our distinguished witnesses today?

Mr. SWIFT. Yes, I do, Mr. Chairman.

It seem to me that we all agree in general terms what the advantages of Intelsat are to this country, as well as others. They have been in the white paper, and you have expressed them here. Whether or not there is going to be economic harm to Intelsat really depends, when you really get down to it, on how separate the separate systems are. You recognize that by making a proposal to the FCC that you feel is adequate to keep them separate from the switched network. The FCC is examining that now.

We—some of the members—have expressed skepticism about whether or not that will work. That seems to be the focus—what is economic harm?

Now if there is not going to be any significant economic harm, which is the term used in the white paper almost as a term of art, how do we measure significant economic harm?

What is the yardstick that the administration uses to conclude that there will be no significant economic harm?

Mr. MARKEY. First of all, I will make sure that I give you our analysis of the economic harm question, so that you can see how we went at it.

In the end, I think it is going to be done within the Intelsat framework. As you know, the President made it clear that he wanted us to go through article 14(d) coordination, which means that we are going to submit this to Intelsat. We're going to let them look at it. We're going to see what they come up with.

We have not said that we're going to be bound by what they come up with, but I think that we are going to be interested in how they look at economic harm.

I must say, when I look at it, I try to compare it to some of the other systems that are now already in existence and that have already been coordinated, and it seems to me that where you have Eutelsat—that now has two satellites up there, I think—and as I indicated, I saw an article here where they're going to put another three up, and that apparently is not significant economic harm to Intelsat.

That tends to tell me something. I think you have to relate it to the other events that have already occurred within the Intelsat

framework and try to make a judgment as to whether this meets those requirements.

Mr. SWIFT. Forgive me. That sounds awfully mushy to me.

I know this is not an area in which, you know, you can go out and prove something. I understand that. But given what everyone agrees is riding on this decision—the quality of Intelsat, what it has done for the U.S. economically, what it has done for us in terms of our foreign policy—that seems like an awful mushy economic basis on which to go about fixing a machine that ain't broke. I will say that again.

Mr. MARKEY. I don't think we're trying to fix anything.

Mr. SWIFT. That is exactly the point, because nothing is broke. We shouldn't be trying to fix it.

Mr. MARKEY. Let me say, whether or not it is broken is a matter of opinion. I think if you are a user and you cannot get the technology that you would like to get and use, then you might think it is broken.

So there may be those out there who feel that the Intelsat system is broken, to the extent that it is not providing services that they would like to have. The technology is there and not available.

Mr. SWIFT. What are the new services that are going to be provided?

Mr. MARKEY. When I say "new services," I mean services that can be provided with smaller Earth stations for smaller cost than Intelsat can provide them.

Mr. SWIFT. You are talking about configuring. You're not really talking about new services.

Mr. MARKEY. You are talking about the configuration of the satellite, the power of the satellite, the size of the earth stations, what frequencies you are using. All of these things go into the equation.

Mr. SWIFT. When you say "new services," you are not talking about analog and digital communications, data collection and distribution and teleconferencing?

Mr. MARKEY. Let's be clear. Intelsat can provide data transmission. They can provide video transmission and teleconferencing.

What is at issue here is how that is done and how convenient it is to the customer and what the price is. That makes a heck of a difference as to whether you use it or not.

Mr. SWIFT. Without intending to, it may be that the term "new services" by the layman would be interpreted as the services I just listed. You're not talking about those types of services at all.

Mr. MARKEY. I think there has been some misunderstanding. I think we did not clarify it enough for you; yes, sir.

Mr. SWIFT. That's fine. Just a few last questions.

Chairman Fowler, on the process—and I know you went through this with the Chairman of the Full Committee—but I am puzzled about the fact that you are holding both an inquiry and a rulemaking simultaneously on this. Because it leads to the possibility that the FCC can come up with a rulemaking and implement it without the public—and that means Congress and the administration and competitors and foreign Governments, anybody who wants to talk about it— without them being able to respond to whatever your specific proposal is. And that seems, on the face of it, though legal and within your authority, unfair.

I did not hear an assurance to the Chairman that when, in fact, you finish the inquiry and the rulemaking, that you are going to provide a time to comment. I think you said to him that somebody would be within their rights to petition for a rehearing and so forth.

I do not see why you should not be willing to have a rulemaking where people could come in and respond specifically to what you have put into the rulemaking.

Mr. FOWLER. Anyone who reads the NOI has a very clear idea of the issues that the agency is considering.

Mr. SWIFT. It's not the issues, it's your answer that is interesting.

Mr. FOWLER. It is clear that the central focus of that inquiry is the executive branch determination, which is (a) that in the national interest, alternative systems are required; (b) if they are authorized by the agency, that these limitations be placed on their operation; and (c) that they be entered into consultation under 14(d) of the Intelsat agreement prior to their going into operation.

Mr. SWIFT. What's the rush?

Mr. FOWLER. And then we ask other questions—impacts on domestic satellite manufacturers, how do we measure economic harm, what are the criteria, how do we then determine what is significant economic harm.

Anyone reading that document knows exactly what the issues and the proposals that the agency is considering are.

Mr. SWIFT. What's the rush?

Mr. FOWLER. It has been 2 years since the applications were first filed, Mr. Swift. It will be another year to 18 months before any final authorizations could be granted to these alternative systems. And I think that is a rather long timeframe. I don't think it is a rush.

Mr. SWIFT. You do not think there is any rush? Did you misspeak? You do not think you are rushing it?

Mr. FOWLER. No.

Mr. SWIFT. Still it is an extraordinarily compressed proceeding for the FCC. I do not understand why that is necessary. It would not extend the time that much.

The impact of the issues that are at stake here, if this decision is wrong, are enormous. And I think we have had some agreement on that. We have gone over and over and over that again today. I simply point out that you have it within your authority in terms of the rulemaking to come out with something that is not what the recommendation of the administration is.

I think a lot of nervous people would be a lot less nervous if they knew that once you decided what you wanted to do, then they were going to get a chance to comment on it, rather than commenting on what the administration has proposed and anything else the mind of man might conceivably want to come out of this situation with. Because the FCC could do that.

Mr. FOWLER. I really agree with you in one sense. It is clear, I think, from a reading of the document what it is that the agency is proposing. But if we were to veer from that and do something quite different, I want to assure you now that we would call for another round of comments and another proceeding in that eventuality.

Mr. SWIFT. That is some comfort in a hearing in which there has not been a lot.

I want to thank you gentlemen for sitting here so long, and I want to thank the indulgence of the Chair. I appreciate it very much. Thank you.

Mr. WIRTH. Thank you very much, Mr. Swift. We appreciate your very good questioning of our distinguished witnesses today.

Gentlemen, unless you have closing words for the good of the order, with gratitude——

Mr. FOWLER. We'll head back downtown.

Mr. SCHNEIDER. We'll go off and cable 109 embassies.

Mr. WIRTH. Gentlemen, thank you very much. We appreciate your being here.

[Whereupon at 4:26 p.m. the hearing was adjourned.]

[The following letter and attachments were submitted for the record:]

UNITED STATES DEPARTMENT OF COMMERCE
National Telecommunications and
Information Administration
Washington, D.C. 20230

April 16, 1985

Mr. Donald A. Watt
Printing Editor
Committee on Energy and Commerce
House of Representatives
Washington, D. C. 20515

Dear Mr. Watt:

In the course of Assistant Secretary Markey's recent testimony before the Telecommunications Subcommittee, Chairman Wirth asked that we provide certain INTELSAT documents bearing on the matter of INTELSAT pricing policies. When the corrected transcript was returned to your office last week, I indicated that several of the papers at issue were being reviewed.

This review is completed, and I am forwarding the documents for inclusion in the record of these hearings. They should be inserted beginning at page 80:

We are also forwarding a copy of these documents to Chairman Wirth. For his convenience, the pertinent sections have been highlighted. We have not highlighted those sections in the enclosed set, however, as the markings would in all likelihood affect their photo-reproduction.

I trust that this is satisfactory. If there are any questions regarding this matter, however, please let me know (377-1551).

Sincerely,

Kenneth Robinson
Policy Adviser to
the Assistant Secretary

Enclosures

INTERNATIONAL TELECOMMUNICATIONS SATELLITE ORGANIZATION
ORGANISATION INTERNATIONALE DE TELECOMMUNICATIONS PAR SATELLITES
ORGANIZACION INTERNACIONAL DE TELECOMUNICACIONES POR SATELITE
3400 INTERNATIONAL DRIVE, N.W. WASHINGTON, D.C. 20008-3098 TELEX 89-2707 TELEPHONE (202) 944-6800

For Immediate Release

85-16

"LIVE VIA SATELLITE" MEANS INTELSAT--
DIRECTOR GENERAL DESCRIBES WIDE ARRAY
OF EUROPEAN SATELLITE TV SERVICES

LONDON, March 4 -- Growth in the use of the INTELSAT system for international television distribution is attributable in many respects to the extremely low rates charged to Signatories, to highly flexible tariff policies, and to the unique technical capabilities of the INTELSAT global communications satellite system, Director General Richard R. Colino told members of the European Study Conference in a speech at the Selfridge Hotel in London last week.

In his address, Mr. Colino reviewed INTELSAT's international television services and the many innovations introduced by his organization during the past year.

(cont'd)

For full-time internatonal television, these include:

- o preemptible video services
- o non-preemptible video services
- o different levels of service protection
- o cross-strap services
- o reduced rates for multidestination transmission
- o digital television service
- o videoconferencing with INTELSAT Business Service.

For occasional use television:

- o peak/off-peak pricing
- o occasional access to domestic leases
- o occasional access to international video leased.

"Over 49,000 hours of international television were carried by INTELSAT in 1984, so on average roughly five countries are transmitting or receiving TV every minute of every day", Mr. Colino told the audience. Most of these TV transmissions were carried over the fourteen television channels currently allocated for "occasional use" reservations of international television. This capacity is on seven INTELSAT satellites with six channels in the Atlantic region, four channels in the Indian region, and four channels in the Pacific region.

(cont'd)

The Director General pointed out that the growth in the use of the INTELSAT system for international television distribution was the result of technological capacity and innovation, low rates charged to Signatories and highly flexible tariff > policies. "INTELSAT offers broadcasters the ability to interconnect simultaneously all points of the globe through its wide variety of orbital locations and the so-called global beams covering entire ocean regions", he said. "Hemispheric and spot beams also offer flexibility in controlling networking configuratons."

Mr. Colino noted that the Turner Broadcasting System is the first broadcaster to take advantage of a cross-strap service by providing video programming to England from a home base in Atlanta. He also discussed the future development of satellite-delivered television services, including low-power DBS networks, high-definition television and TV channel multiplication.

INTELSAT originally introduced full-time television leases as a response to particularly heavy demand for television service during special or unanticipated events such as the assassination attempt on the Pope. In the two years since this service was introduced, eight long-term leases have been established.

(cont'd)

"The use of INTELSAT satellites allowing TV distribution on a national, regional and global scale is generally far more economic and advantageous that any other alternative possibly imaginable," Mr. Colino asserted.

The Director General said that while "live via satellite" is now a familiar caption on television screens around the world it does not recognize that INTELSAT is the system responsible for transmitting virtually all international television. He pointed out that INTELSAT's global network of 15 geosynchronous satellites made it possible for people around the world to "participate in" international events such as man's first walk on the moon in the summer of 1969 and the Los Angeles Summer Olympics in 1984. He also noted several events that set records for television transmission, including the Royal Wedding in England, the attempted assassination of President Reagan and the World Cup Soccer Tournament in 1982.

The Director General concluded by citing INTELSAT's prime objective of providing, on a commercial basis, space segment for international public telecommunications service of high quality and reliability, available on a non-discriminatory basis to all areas of the world at the lowest possible cost.

# # #

CONTACT: Chris Cameris
Public and Media Relations
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PRIVILEGED

Contribution of the
Director General

BG-62-31E W/3/85
11 March 1985

Roles of the Board of Governors and the Meeting of Signatories in the Determination of Utilization Charges

Executive Summary

1 The general legal framework governing the determination of INTELSAT space segment utilization charges is described in the legal memorandum dated 14 December 1984 appearing as Attachment No. 1 to BG-61-67. As part of the overall review of INTELSAT's charging policies, this document discusses one specific topic within that framework, the respective roles of the Board of Governors and the Meeting of Signatories in relation to utilization charges.

Discussion

2 The controlling principles governing the determination of utilization charges set forth in Article V(d) of the INTELSAT Agreement are the following: (i) utilization charges are determined in accordance with the Agreement and the Operating Agreement, (ii) the same utilization charges shall be applicable to the same type of utilization, and (iii) the utilization charges for each type of utilization shall be the same for all applicants of space segment capacity for that type of utilization.

3 The Agreements give the Meeting of Signatories and the Board of Governors separate and distinct roles in connection with the establishment of utilization charges. The function of the Meeting of Signatories is, under the Agreements, to "establish general rules, upon the recommendation of and for the guidance of the Board of Governors, concerning . . . (C) the establishment and adjustment of the rates of charge for utilization of the INTELSAT space segment on a non-discriminatory basis" (Article VIII(b)(v).

4 One of the functions of the Board of Governors is to establish the "rates of charge for utilization of the INTELSAT space segment in accordance with such general rules as may have been established by the Meeting of Signatories" (Article X(a)(viii). The principle that the Board is empowered to set utilization charges for the INTELSAT space segment is reiterated by Article 8(a) of the Operating Agreement, which provides in part that "the Board of Governors shall specify the units of measurement of INTELSAT space segment utilization relative to various types of utilization and, guided by such general rules as may be established by the Meeting of Signatories pursuant to Article VIII of the Agreement, shall establish INTELSAT space segment utilization charges." However, the Board should comply with Meeting of Signatories rules.

These provisions, read together, clearly determine the functions of the Meeting of Signatories and Board of Governors in this respect: the Meeting of Signatories establishes general rules upon the recommendation and for the guidance of the Board, and the Board sets the charges applicable to each specific service.

INTELSAT's practice throughout the years has been in accordance with these principles: the Board has set the utilization charges for all INTELSAT new services and has decided upon any increase or decrease to existing charges, within the framework of the general rules established by the first Meeting of Signatories.

5 Article 8(a) of the Operating Agreement provides, in relation to cost recovery, that charges for utilization of the INTELSAT space segment "shall have the objective of covering the operating, maintenance and administrative costs of INTELSAT, the provision of such operating funds as the Board of Governors may determine to be necessary, the amortization of investment made by the Signatories in INTELSAT and compensation for use of the capital of Signatories."

At its first meeting the Meeting of Signatories concluded in part that:

> "1. Pursuant to Article V(d) of the Agreement, the rates of space segment utilization charge for each type of utilization shall be the same for all applicants for space segment capacity for that type of utilization.
>
> "2. The charge for each type of space segment utilization shall be fixed with the objective that that type shall make an appropriate contribution to the overall revenue requirement of INTELSAT, as prescribed by Article 8 of the Operating Agreement.
>
> "3. To these ends, this contribution shall, as far as practicable, reflect the cost to INTELSAT of making available the space segment capacity provided for the purpose of the type of utilization in question."

The general rules thus far adopted by the Meeting of Signatories specify that the general 'objective' should be that charges for each service should make an 'appropriate' contribution to the overall revenue requirements of INTELSAT, and have left it up to the Board to determine the degree of 'appropriateness' of such contribution.

Moreover, Rule 3 laid down by the Meeting of Signatories is clear in that it does not establish as a legal requirement that charges must necessarily reflect the cost of the service; on the contrary, the rule specifies that it should be so 'as far as practicable.' The Board then determines the extent to which that is 'practicable' in each specific case, taking into account all the relevant factors, including market and business considerations. Thus, neither the INTELSAT Agreements nor the general rules adopted by the Meeting of Signatories require INTELSAT to operate on a fully allocated cost basis. INTELSAT is legally permitted under the Agreements to establish charges on an incremental or marginal cost basis.

To the extent that the Board may wish to consider charging approaches or charging policies that differ substantially from past practice, the Meeting of Signatories should be consulted to determine if such new approaches or policies remain consistent with the general rules established by the first Meeting of Signatories. Moreover, it should also be remembered that the general rules adopted by the first Meeting of Signatories were very general in nature, probably as befitted the situation that existed at that time. It is entirely possible, however, for the Meeting of Signatories, should it wish to do so, and in light of present circumstances, to revisit the situation and adopt general rules of considerably more specificity, providing much more detailed guidance to the Board in connection with the latter's establishment of charges for specific services.

Conclusions

6 It can be concluded from the above that:

(i) The Agreements confer upon the Board the authority to set charges for the use of the INTELSAT space segment;

(ii) The Board's action in that respect should be in accordance with the general rules set by the Meeting of Signatories from time-to-time; and

(iii) In accordance with the Agreements, the Meeting of Signatories may revise or amend the general rules adopted at MS-1, or may adopt an altogether new set of general rules for the Board's guidance. Such rules may be more or less specific as the Meeting of Signatories may itself decide.

Contribution of the Director General

PRIVILEGED

BG-59-39E H/6/84
8 May 1984

CHARGING PHILOSOPHIES AND POLICIES

I. EXECUTIVE SUMMARY

1. The nature of service requirements, as well as the environment in which the telecommunications industry operates, are undergoing fundamental changes. In order to improve the cost-effectiveness of the INTELSAT system, it is opportune to review the charging policies, both to see how revenue requirements may be reduced and how revenues may be increased and/or sustained for longer periods of time, through a better utilization of space segment.

II. DISCUSSION

2. The basic principles relating to investment in INTELSAT, provision of services, and financial activities associated with these factors are to be found in the Agreement and the Operating Agreement. For example, the scope of INTELSAT activities, with consequential financial and planning implications, are defined primarily in Article II and Article III of the Agreement, along with the Preamble. More specific principles, guidelines, and requirements of a financial nature are to be found in Article III and Article V of the Agreement and in the functions of the Meeting of Signatories, pursuant to Article 8, which establishes general rules for charges (see document MS-1-6). In the Operating Agreement, several articles deal with financial contributions, investment shares, financial adjustments, transfer of funds, and similar financial matters, but the essence of the financial principles for charging for use of the system and for setting and obtaining revenue requirements, is to be found in Article 8 of the Operating Agreement.

3. A review of pertinent provisions of the Agreement and the Operating Agreement indicates that the Board of Governors has flexibility in approaching the question of the INTELSAT system. For example, while it is necessary for the Board to specify "units of measurement of INTELSAT space segment utilization" pursuant to the provisions of Article 8(a) of the Operating Agreement, the definition of a unit of satellite utilization is not specified in any way in either the Agreement or the Operating Agreement. Accordingly, there is latitude available to the Board at any time to review its definitions of units of satellite utilization [according to various types of utilization in accordance with the provisions of Article V(d) of the Agreement and Article 8(a) of the Operating Agreement]. The Board is, of course, not obliged to maintain the definition of a basic "unit of satellite utilization" which it last revised at its Forty-fifth Meeting (see BG-45-3, para. 70), but could develop different types of definitions, primarily

indicating the powers and bandwidth, but perhaps taking into account other salient factors. Of course, the Board is required to abide by the guidelines of the Meeting of Signatories (It also has the opportunity to recommend other guidelines to the Meeting of Signatories.) and the requirements of the Agreements, particularly those with respect to non-discriminatory access to the system.

4. Similarly, development of such concepts as the Atlantic Ocean Region, Pacific Ocean Region, and Indian Ocean Region configuration of satellites in orbit, and the establishment of primary and major path satellites, involve systematic analysis, taking into account financial, service opportunity, technical, and operating factors, of how best to maintain, operate, and expand the INTELSAT global communal satellite system in a period of change. One might accommodate the objectives set forth in the Agreements, and meet the fundamental responsibilities of INTELSAT, in a variety of ways which could invoke changes in concepts related to satellite operations and locations in all ocean regions, and whether to maintain the hierarchical Primary/Major Path satellite concepts.

5. Varying degrees of efficiency are obtained in the use of INTELSAT transponders, both within particular satellites and in comparing different satellites in the same ocean region. Varying degrees of comparative efficiency use of transponders emerge from comparing satellites in different ocean regions.

6. Within a Primary satellite in the Atlantic Ocean Region, there are different degrees of efficiency loading of transponders on a widely varied assignment of communications carriers, e.g., groups, supergroups. Further, within the assignment pattern of a supergroup of, for example, 132 channels, there may be discrepancies as great as 35 percent in how many actual circuits are to be found within an assigned supergroup. The same situation applies with respect to other satellites located not only in the Atlantic Ocean Region, but in the Pacific Ocean and Indian Ocean Regions as well. The fundamental basis for assigning given access to carriers is the assumption that there will be meaningful loading of such carriers. A question is raised as to what is a reasonable level of loading? Is 50 percent, 75 percent, 85 percent, or 90 percent an efficient loading factor? Should Signatories with 60 percent and 90 percent loading pay the same per-circuit even though their efficiency factors are significantly different? A corollary, of course, is whether users/Signatories should pay for the carrier assignment rather than the per unit charge applied.

7. There are, in INTELSAT's history, many instances where new utilization charges have been developed, utilizing innovative approaches to either attract new sources of revenues or to maximize operational efficiency or efficient fill

factors. In the case of the lease offering to INMARSAT of MCS capacity, a wide range of figures was considered for the contribution to "common system costs" that would be included in the lease figures. The option for a fourth MCS was offered at a substantially lower price than the original three packages. In the case of the lease charge for domestic services, factors considered in the pricing decision included "preemptibility" of service and five-year commitments to 100 percent transponder use or "fill." The basis of television charges, derived over a decade ago, is still tied to a 360-unit equivalence per 36 MHz transponder, or 180 units per 18 MHz transponder. No changes have been made, despite the fact that much higher effective utilization of that capacity can be achieved today and in the future with CME, CPDM or TDMA/DSI. These charge equivalents may be off by more than a factor of three times. The per-minute charge for television has changed from $15 per-minute to $8 per-minute over a time when the unit of utilization has changed from $32,000 per year to $4,680 per year. These examples, and many more, suggest that in fact INTELSAT can explore improvements in charging concepts to respond to current operational and system needs.

8. If efficiencies in the space segment can be made significantly in accordance with some of the points discussed in the preceding paragraph, then the question of timely introduction of additional antennas or other means of off-loading from congested satellites, whether primary, major path, or other, also necessarily arises. At times it is possible for INTELSAT to postpone significant capital investments for new satellite facilities in orbit because of the timely introduction of additional earth station antennas to relieve pressure on a primary satellite or even a major path one. It is also possible for INTELSAT to postpone saturation of satellites and defer replacement costs due to the introduction of various forms of efficiencies, including circuit multiplication capabilities. In the past, it has been decided to provide a 12.5% reduction for TDMA/DSI circuits. Is it not necessary or appropriate to provide financial incentives for those who build additional antennas and introduce other forms of improved efficiencies (such as CFDM and CME equipment), in order to better utilize existing space segment, and postpone the replacement of satellites in orbit?

9. In the next few years, a substantial portion of the revenue requirement will result from capital investments in satellite programs which have already been adopted. Revenue requirements are, of course, a function of the volume of future investments and their timing. The timing of investment has been dominated by the saturation of the primary satellites in the Atlantic Ocean and Indian Ocean Regions. Any postponement in the saturation of these satellites therefore defers investment in the successor series and so reduces the overall revenue requirements. Investment in the five INTELSAT VI

spacecraft, launch vehicles, and associated services is of the order of $1 billion, and future series of spacecraft could conceivably cost more. On this basis, a deferment of one year in the procurement of a future series will save the Signatories over $100 million in cost of money alone.

10. During the 1970's, traffic in INTELSAT increased at about 25% per annum, with the system size doubling in less than every four years. Although an economic depression caused a fall in the annual growth rate to 17% in 1974 from 31% in 1973, and lower to 16% in 1975, it climbed back to 24% in 1976 and remained more or less constant until late 1981.

11. In 1982 and 1983 growth slowed to an annual rate of 18% and 10% respectively, and there are no indications of an early return to the high growth rates of the 1970's.

12. INTELSAT has emerged from an era, as can be seen from the above, in which it was hard pressed to keep pace with demand and was constantly developing new satellites with substantially greater capacities than its predecessors. Seemingly the rate of traffic increase was far ahead of the development of larger capacity satellites, and accordingly, as early as 1971, the concept of the major path 1 satellite was introduced in the Atlantic Ocean Region. Two factors have influenced space segment development in the 1980's: the additional life, over the design life, achieved by INTELSAT IV and IV-A satellites and the launch success rate, higher than anticipated. Thus, in three years INTELSAT progressed from scarcity in space segment capacity to having excess capacity. The overall utilization is currently between 35% and 45%. INTELSAT has provided satellites at additional locations, e.g., at 307 E and 359 E, to expand the coverage area for international service, e.g., direct service between India and the east coast of the United States, and between Europe and the west coast of the United States. Additional service offerings are being established.

13. As noted above, matters have changed in the last decade. INTELSAT has traditionally relied on Standard A, and later on Standard C stations to maximize efficient use of satellite capacity. Route saturation was deferred by the use of major path satellites which required earth station owners to construct second antennas--and, in the case of the Atlantic Ocean Region, third antennas. In 1979 non-mandatory guidelines were developed for the INTELSAT V era, advocating second and third antennas when traffic forecasts reached certain levels. In practice, Signatories established additional earth stations over a wide range, 200-400-1000 circuits.

14. Additional antennas not only assisted the best use of space segment resources but also provided the earth station owners with the benefits of diversity, operational flexibility,

and redundancy. As the number of users grew, the primary satellite became the means of reaching every country operating in the region, and the major path satellite was perceived as satisfying limited communities of interest. This contributed to the extraordinary complexity in the connectivity required on the primary satellite, and the higher value of access to the primary satellite should be recognized.

15. The introduction of Standard B antennas, smaller and less costly, made the satellite system economical for countries with modest traffic requirements. A range of smaller size standard antennas at both 6/4 and 14/11 GHz has been introduced for a wide range of new applications.

16. Various modulation methods (TDMA/DSI), such as companded FM, have been introduced to improve space segment utilization. At earth stations there can be wide varieties of traffic levels. For example, earth stations equipped for TDMA/DSI vary from 300 to 700 circuits from the earth stations operating on the same satellite. However, system-wide costs are reduced to the benefit of all.

III. CONCLUSIONS

17. This document has endeavored to discuss some of the charging philosophies and policies which the Board may wish to consider. Some of the discussion indicates some areas for major and significant changes in the future, such as the possibility of charging for efficiencies in carrier assignments for those who fill groups and/or supergroups more effectively than others. Others points address providing financial incentives for those wishing to equip for more efficient modulation and multiplication techniques and/or constructing additional antennas to alleviate system congestion and capital investments. Various studies already reported to the Planning Committee suggest that financial incentives, rather than operational guidelines, are more likely to produce the desired operational results. Specific proposals addressing these or the use of other charging policies to promote system efficiencies will be contained in future documents to be submitted to the Board, including such possible concepts as charging little or no premiums for smaller aperture (i.e., Standard B) earth stations on satellites with low fill factors; increased incentives for the introduction of TDMA/DSI, companded FDMA and circuit multiplication equipment; or lower utilization rates for Signatories willing to make long-term traffic commitments for space segment utilization (i.e., five to seven years).

PRIVILEGED

Contribution of the
Director General

BG-62-24E W/3/85
8 March 1985

INTELSAT CHARGING POLICIES
A HISTORICAL OVERVIEW

INTRODUCTION

The purpose of this document is to describe the various factors that have been considered and employed by the Board of Governors/ICSC in the past as the basis for the charging policies and practices adopted by them. As a first step in this process, it may be useful to restate some of the basic principles of the INTELSAT Agreements.

Article V of the basic INTELSAT Agreement provides in pertinent part that each Signatory shall share in the investment and operating costs associated with the INTELSAT space segment, in direct proportion to such Signatory's percentage utilization of that space segment. This Article, in conjunction with Articles 4 through 8 of the associated INTELSAT Operating Agreement, further provides that all users of the INTELSAT space segment (including non-member users) shall pay space segment "utilization charges" set with the objective of recovering the INTELSAT investment and operating expenses including amortization of and interest on invested capital. Moreover, the space segment utilization charge is required to be the same for all users for each type of utilization.

The basic purpose and effect of these provisions was to structure INTELSAT as a cost-sharing cooperative, and to specify a particular form of cost sharing in which the relative or proportionate use of space segment capacity during a specified time interval (currently a six-month period during each year) serves as the primary basis for allocating investment shares, capital contributions among signatories and revenue distributions to them.

There are and have been a wide range of INTELSAT space segment utilization charges, associated with different service applications (voice, video, data); different technologies (FDM/FM, TDMA, SCPC, SPADE, etc.); different usage patterns

(full-time, part-time, occasional); different earth station types and sizes; and other factors. Some pricing variations have been attributed directly to differing efficiencies in the utilization of space segment capacity. Others represent deliberate attempts to promote the adoption and use of technological or operating developments capable of making more efficient utilization of space segment capacity. Some pricing variations have apparently been intended to promote the use of idle space segment capacity, while making some "contribution" toward the recovery of "sunk" and/or "common" costs. Thus, over a period of time, several factors have figured in the Board's consideration in arriving at, or adjusting charges for various services.

An essential first step in deciding on the charges (or cost shares) to be levied for the shared use of a common resource such as the INTELSAT space segment is the selection of a suitable definition of the resource and a suitable unit for measurement of resource capacity and utilization.

The ICSC initially decided to define its basic unit of utilization in terms of a derived measure of the space segment resource, i.e. "the portion of satellite capacity required to produce, in conjunction with the existing ground segment at any particular time, one telephone circuit of CCITT quality" (ICSC-4-7, W/2/65). In selecting a unit of capacity and utilization measure which is dependent upon a specific application or service (i.e. voice telephony); a particular method of deriving this unit of capacity or utilization (i.e. FDM/FM); a particular type/size of earth station; and other such factors, the need subsequently arose for a continuing requirement to review and readjust charges to take into account other service applications, technologies, operating techniques, earth station sizes and types, and other factors. Accordingly, in subsequent considerations of charges for different services, the continued adequacy and approximations of the present definition of a unit of utilization has at times come into question. This issue is addressed in a separate contribution to the Working Group.

FULL-TIME TELEPHONY SERVICE

Revenues from full-time telephony service have historically comprised the bulk of total INTELSAT revenues. The service offers a voice grade, 4 kHz circuit for public switched telephony or private leased telephone networks. Full-time telephony service is provided mainly through the use of FDM/FM or companded FDM/FM circuits.

Annual charges for full-time telephony service (the utilization charge) are derived by determining the total residual revenue requirement for INTELSAT (after subtracting expected revenues from all other services) and dividing by the expected number of equivalent full-time half circuits. Currently, through Standard A earth stations, the charge for FDM/FM full-time voice service is $390 per month for each end of a two-way half circuit.

Charging policy for full-time telephony service involves consideration of two major issues - the definition of the unit of utilization and the derivation of the utilization charge. These are discussed below.

Unit of Utilization

The definition of the unit of utilization is crucial to charging policy for INTELSAT - both for full-time telephony and for other services - because charges for many other services have been derived based on an assumed equivalence ratio in terms of units of utilization per transponder. In ICSC-3-5 the United Kingdom suggested that "the unit of utilization should be a telephone quality circuit of 'MS 303 quality.'.

Alternative definitions of the unit of utilization were studied by the Advisory Subcommittee on Finance and the Technical AdHoc Working Group (ICSC/F-2-7). The Technical Ad Hoc Working Group expressed the view that total satellite capacity (which was defined as a function of power and bandwidth) should be utilized as the appropriate unit for charging purposes. This working group pointed out:

(a) The desirability, not only in relation to the MS 303 system, but also with possible later systems in mind, of avoiding the complications that might arise if some other unit, e.g., a telephone circuit, were selected as the charging unit. Difficulties were foreseen, for example, in defining what constitutes a telephone circuit, in catering for variation in capacity in terms of telephone circuits caused by developments in earth

station techniques, by the accretion of different types of ground stations, and by the elimination of restrictions on the use of satellite capacity imposed initially by the terrestrial network.

(b) The argument that the telecommunication-carrying capacity of the satellite is a function of bandwidth and radiated power, and that this capacity should be made available to potential users for whatever telecommunication purposes and exploitation techniques that users choose to employ.

(c) This method of charging signatories would still permit charges to users on a per circuit basis.

A minority of members on the Advisory Subcommittee on Finance were impressed by this reasoning. However, the majority believed that there were strong practical and financial reasons in favor of designating a telephone circuit as the unit of satellite utilization. Accordingly, at ICSC-4 (see ICSC-4-7, p.5), a telephone circuit of CCITT quality was adopted as the unit of utilization. Although it was noted that this unit only related to the MS 303 program and was not to be regarded as setting a precedent for the future, this definition of the unit of utilization has continued virtually unchanged to the present. Also at ICSC-4, for charging purposes it was decided that the unit of utilization would relate to the number of circuits continuously available, and would not be reduced to reflect utilization of the circuit for less than twenty-four hours per day. Again, this concept still applies.

The unit of utilization was essentially finalized at ICSC-8 (see ICSC-8-3). It was defined as "that part of the satellite's capacity which is required, in conjunction with the appropriate earth stations, to establish one end of a two-way transatlantic telephone circuit with the objective of providing quality of service in accordance with the appropriate CCITT/CCIR recommendations."

Subsequent developments were confined to refining further the unit of utilization as defined at ICSC-4 and ICSC-8 or to studying (and rejecting) proposed alternative units of measure. For example, at ICSC-22, the definition of the unit of utilization was clarified "with the result that non-standard earth stations are charged on the same basis as the standard earth stations despite the greater satellite capacity utilized by such stations in establishing one end of a two-way telephone circuit" (see ICSC-22-6). Subsequently, Standard A and Standard B earth station technical parameters were defined and

a rate adjustment factor applied to half-circuits carried through the "B" stations to reflect their reduced efficiency in the use of space segment resources.

An attempt at ICSC-39 to allow use of a 3 kHz channel spacing for full-time voice traffic was rejected in favor of the 4 kHz spacing dictated by the CCITT standard. Use of 3 kHz spacing was only allowed for emergency cable restoration (ICSC-39-7 and ICSC-39-3).

At ICSC-46 the Committee decided to request the ICSC/T to further study alternatives to the current unit of utilization. The ICSC/T noted that it would "be even more difficult to find a unique technical basis for a single unit of utilization generally appropriate to all types of services in the INTELSAT IV system" than it would have been in the past. It did recommend retaining the current definition where telephone circuits were concerned. No action on a new definition of the unit of utilization for new services was taken, however, as a result of that effort.

Charging on a carrier rather than a half-circuit basis was considered in ICSC-52-12, ICSC-54-12 and BG-60-45. The rationale for these investigations was the fact that, once carriers are assigned to a user, that part of satellite capacity is effectively barred to other users. Thus, charging on this basis might promote more efficient utilization of the space segment. In addition, BG-60-45 suggested other possible units of utilization, such as a 64 kbps digital channel.

Utilization Charge

As defined in ICSC-52-12, the utilization charge for full-time voice service reflects average system costs plus compensation for use of capital. However, this charge is not "built-up" by fully distributing all INTELSAT costs or revenue requirements among the various uses of space segment capacity. It is derived by determining INTELSAT's residual revenue requirement (after expected revenues from all other services are considered) and dividing by the number of full-time half-circuits expected to be used. This process of setting the utilization charges therefore excludes considerations such as:

(a) value to user
(b) type of satelite used
(c) incremental costs
(d) particular type of transponder/carrier in which the circuits are assigned, etc.

It was a decision of the ICSC in the earlier considerations that INTELSAT space segment charges would be set independently of earth segment charges (ICSC-3-5, ICSC-3-4 and ICSC-6-4). The first INTELSAT voice-channel utilization charge ($32,000 per annum during 1965) was a compromise reached after considering actual costs and costs projected for competitor facilities. Since that year, voice-channel utilization charges have always been based solely on the residual cost methodology described above.

Over a period of time two further refinements of note in the process of setting the utilization charge occurred. First, at ICSC-33, the Committee agreed to request the Manager to prepare a tentative estimate of the utilization charge on a year-by-year basis for a ten-year forecast period. Multi-year forecasts have been used since that time as inputs to the decision-making process for setting the utilization charge. Second, at BG-14, the Secretary General (BG-14-21, p. 3) acknowledged the undesirability of reducing the utilization charge in one year to a level that might require that it be raised (even if only a nominal amount) in any future year. This policy of no increases in satellite charges has been consistently adhered to by the Board.

TIME DIVISION MULTIPLE ACCESS (TDMA)

Time Division Multiple Access (TDMA) has been established to be a technological advance whereby a greater number of voice channels may be derived from a given amount of satellite power and bandwidth than is possible with the conventional FDM/FM technology. The implementation of TDMA would thus result in more efficient utilization of the basic satellite or space segment resource (e.g. power and bandwidth), and thus lower costs per unit of derived communications capacity (i.e. voice channel).

This new technology requires no additional space segment hardware, but does require additional hardware at those individually-owned earth stations which elect to employ TDMA. Were INTELSAT utilization measured and charged for in terms of power and bandwidth, individual earth station owners would have a direct incentive to adopt TDMA technology when the benefits (i.e. lower INTELSAT charges through reduced utilization of basic capacity) exceeded the costs (i.e. additional earth station costs). With no change in INTELSAT utilization charges, those users who determine that TDMA benefits exceed its costs would implement it and use less space segment capacity at less cost, while those who determine otherwise would continue to use more space segment capacity at greater costs. In neither case would the user be charged more or less than his proportionate share of INTELSAT costs based on the basic space segment capacity used. Meanwhile, all INTELSAT users would benefit through lower average costs resulting from extended satellite capacity and life due to the more efficient utilization achieved by those users who adopt TDMA technology.

The scenario under which TDMA was actually introduced into the INTELSAT system differed significantly from that just described. The potential advantages of TDMA over FDM/FM in deriving more voice channel capacity from a given satellite power and bandwidth were clearly recognized by INTELSAT as early as 1973 (BG-2-3,); and Attachment 1 to BG-2-7). However, it was also recognized at that time that the costs of this increased efficiency would be borne by those users who installed TDMA equipment at their individual earth stations; while the benefits (e.g. increased numbers of derived space segment voice channels and associated lower cost per voice channel) would be distributed among all INTELSAT members under existing charging policies based on the voice channel unit of utilization. The INTELSAT Board of Governors thus requested the Manager to study various operational and economic factors relating to the introduction of TDMA, including "the possibility of recovering the incremental cost of TDMA

equipment through reductions in space segment charges arising from the introduction of TDMA; calculations were to be made separately for large, medium and small earth stations" (BG-3-3, BG-3-23).

In response to this request, the Manager submitted studies (BG-5-5) which focused on one measure of the overall cost savings to be realized through TDMA implementation (e.g. through deferment and/or more efficient use of satellite capacity); and on alternative possibilities for passing through all or part of these savings to TDMA users. Specifically,this study showed that each TDMA user should realize an annual "discount" of $220 per voice channel if all space segment "cost savings" due to TDMA accrued to TDMA users, but only $160 per voice channel if such cost savings were shared equally among both FM-derived and TDMA-derived voice channels. This study did not attempt to compare the relative efficiency with which FDMA and TDMA would utilize the underlying space segment resource (i.e. power and bandwidth), or to allocate space segment costs between FDM-derived and TDMA-derived voice channels on this basis.

Following additional TDMA studies and field trials, the BG in June 1975 requested the Executive Organ to "make recommendations on appropriate charges for operational use of TDMA, and to submit such recommendations to the Advisory Committee on Finance for its review and recommendations to the Board" (BG-15-3). The resultant report by the Management Services Contractor (BG/FC-3-7) and the Planning Committee (BG/FC-4-5) were considered by the Board in July 1975 (BG-16-3).

The MSC and BG/FC carried out studies of alternative incentive pricing plans relative to earth station additions (such as TDMA) which result in more efficient utilization of space segment capacity (see BG/FC-4-5). One of the results of these studies was the conclusion that the adoption of any incentive pricing plan for the implementation of earth station capabilities which achieve more efficient utilization of space segment capacity would necessarily require an increase in the space segment utilization charges for less efficient operations, in order to meet overall revenue requirements. Following extensive discussion of this and related points during the BG-16 meeting in July 1975, the Board decided "that it did not wish to consider incentives at this time" (BG-16-3).

Between 1975 and 1981, there were continuing consideration and discussion of the proper definition and pricing of TDMA utilization, accompanied by several additional studies and analyses by the Executive Organ/MSC and the BG/FC. Two

distinct points of view, with numerous variations in detail, were reflected during these discussions. According to one view, INTELSAT should offer "incentives" in the form of reduced space segment utilization charges, to those users who implemented TDMA and thereby achieved more efficient use of space segment resources in creating voice channels. According to the opposing view, technological and operating advances were a desirable and inevitable requirement which ultimately benefits all INTELSAT users, thus any special "incentive" such as reduced space segment charges were both unnecessary and undesirable, and constituted, in effect, the subsidization of some users by other users.

After these prolonged discussions the Board of Governors decided in March 1981 that "the charge for a TDMA/DSI derived voice circuit will be 12.5% less than the applicable charge for the equivalent FM voice circuit" (BG-43-3). This action effectively continued the use of both the derived voice channel and the FDM/FM method of derivation as the standard for measuring space segment utilization, while granting some "incentive" and/or discount to TDMA/DSI users in recognition of their additional earth station costs and much more efficient use of basic space segment capacity. The Board recognized the inevitable inconsistencies that will result with respect to non-voice uses of TDMA and other digital technologies, in stating that "the long term objective will be development of an overall integrated tariff structure applicable to all services employing digital modulation techniques, including TDMA/DNI, SCPC, and wideband data" (BG-43-3).

CABLE RESTORATION

The INTELSAT cable restoration service provides satellite capacity for the emergency restoration of service to submarine cable and other systems when service is interrupted. Service is provided on an as-available basis to cable system owners on the occasional use transponder on each INTELSAT Primary and Major Path satellite. In addition, also on an as-available basis, cable restoration service is provided using space segment capacity. The service was begun in 1965.

Charges for this service were initially based upon a daily rate derived from the annual utilization charge. However, in an effort to recover fully allocated costs for this occasional use service, subsequent reductions in the full-time utilization charge have not been fully passed through. Currently, charges for this service are $28.00 per day per unit of utilization (half-circuit) up to a maximum of $390 per month per unit of utilization (equal to the current monthly utilization charge for full-time voice-grade service). The minimum period for service is twenty-four hours (increasing in daily increments). This minimum was imposed at the time of service initiation.

In 1965, when the service was first begun, the charge was set at $3.70/hour/unit of utilization. This charge was derived by dividing the then current utilization charge ($32,000 per annum) by 360 (days per year) times 24 (hours per day).

For 1966 this charge was reduced to $2.40/hour/unit (ICSC-14-3) in proportion to the reduction in the annual utilization charge from $32,000 in 1965 to $20,000 for 1966. (This price was revised to $58.00 per day per half-circuit for 1967 (ICSC-23-3). The charging policy for this service was further specified in 1966 when the ICSC (ICSC-16-3, paragraph 14), agreed that the cable restoration and occasional use television services "should be of the same category" since they shared use of the occasional use transponder on each satellite. This charging policy was followed until 1971, when charges for the two services were delinked.

At the 47th ICSC meeting, the Advisory Subcommittee on Finance noted that occasional use television revenues were not sufficient to recover the fully allocated costs of the service, even if cable restoration revenues (derived from the same transponders) were included (ICSC-47-12). Thus, the Subcommittee advised that it might not be appropriate in the future to reduce charges for these two services in proportion to the reduction in the utilization charge for full-time service.

This advice was followed for occasional use television, but not immediately for cable restoration. For 1971 INTELSAT reduced the annual utilization charge by 25 percent, to $15,000 (ICSC-48-3). At that time the cable restoration charge was also reduced by 25 percent, to $43.50 per day, while the occasional use television charge was frozen at its then current level ($8.75 per minute per TV half-channel). Further proportional reductions followed for cable restoration services for 1972 and 1973 as the utilization charge was reduced. These reductions occurred despite analyses that demonstrated that occasional services (particularly cable restoration and occasional use television, which still shared the same capacity) did not cover their fully allocated costs (ICSC-57-20 and ICSC-63-12).

In 1973, the Advisory Subcommittee on Finance recommended that no change be made in the then-current cable circuit restoration rate. Instead, the Subcommittee suggested that an attempt be made to develop "reasoned and consistent principles as to the basis on which these services (i.e., cable restoration and occasional use television) should contribute to INTELSAT revenue requirements" (ICSC-63-12, p. 19). Only then could appropriate charges be set. The Subcommittee believed that, because of its longer minimum period compared to the occasional use TV service (24 hours vs. 10 minutes), cable restoration charges were set closer to fully allocated costs than occasional use television (see p. 18 of ICSC-63-12). However, no consensus could be reached on the appropriate assignment of occasional use capacity costs between television and restoration.

The Subcommittee suggested that cable restoration charges be set equivalent to other occasional use charges (i.e., as a percent of the monthly utilization rate). At the Fifth Board of Governors Meeting (October 1973), this was attempted. Adoption of this proposal would have resulted in an effective increase of about 30% for a fourteen day cable interruption. However, passage of this proposal could not be secured. Therefore, cable restoration charges were frozen at their 1973 level of $31/day/unit for 1974, even though the annual full-time voice channel utilization charge was reduced from $11,160 in 1973 to $9,000 in 1974.

By freezing the rate, it was thought that cable restoration revenues (combined with those from occasional use television) would gradually approach fully allocated costs. The rate remained at $31/day/unit through the end of 1970s, (while the utilization charge continued to decline - to $5,760 in 1979), since subsequent analyses continued to demonstrate that occasional use television and cable restoration revenues (combined) remained below fully allocated costs (e.g., see BG-40-30).

At its 44th Meeting (in December 1980), the Board of Governors approved a further reduction in the INTELSAT utilization charge for 1981. Also at that meeting, a reduction in the 1981 cable restoration service tariff was approved (the first since 1973), from $31/day/unit to $28/day/unit. This reduction was approved in response to an analysis submitted by the Director General (BG-44-38) which demonstrated that revenues from occasional use television were now at least equivalent to fully allocated costs. Revenue from cable restoration had meanwhile declined to very low levels, but since these services continued to share the same capacity, an equal proportionate reduction (of slightly less than 10 percent) was recommended and accepted by the Board for each. Current charges for both services remain at their 1981 levels.

Since the 44th Board of Governors meeting, the focus of charging policy discussions regarding cable restoration services has been to evaluate appropriate policy in an era of increasing capacity undersea cables (including proposed fiber-optic cables). Until recently, cable capacities have been low enough so that capacity available on dedicated occasional use transponders (one on each Primary and Major Path per satellite) has been sufficient to restore full capacity. However, the large capacity fiber optic cables planned for the Atlantic may require as many as 19 transponders (as opposed to the three occasional use transponders available in that Ocean Region) to restore service. Reserving sufficient capacity for service interruption on such a cable might therefore be required to ensure continuity of service.

However, the probability of such an interruption is quite low and its timing highly unpredictable. Under these circumstances, a daily tariff such as INTELSAT now uses would produce highly variable and uncertain revenue on an annual basis. In any case, such a tariff may not produce adequate revenue (particularly during each year) to compensate INTELSAT the opportunity cost of reserving up to 19 transponders to restore service.

Thus, INTELSAT has been considering alternative charging policies which incorporate, at least in part, annual subscription fees to be charged to cable owners to compensate for capacity reserved (BG-53-67). The capacity reserved for this service would be used for non-time-sensitive and other services when it was not needed for cable restoration. The most recent proposals have further subdivided proposed services between large capacity cable (owners would serve specific capacity for each such cable) and medium capacity cable (owners of several cables would share reserved capacity). Small capacity cables would continue to be served under current tariffs according to these proposals.

OCCASIONAL USE TELEVISION

Occasional use television is provided using satellite capacity designated for occasional use on each Primary and Major Path satellite. Additional channels may be made available to meet peak demands during major international events such as the Olympics or the World Cup. The service was first offered on INTELSAT I during 1965, when service was made available for the Atlantic Ocean Region.

Charging policy for this service has been similar to that for cable restoration service since these two services shared the same capacity. Thus, charges were first derived based on the annual utilization charge prorated per hour (e.g., in 1965 the charge was $3.70/hour/unit based on an annual utilization charge of $32,000 per half circuit).

Differences in charging policy for occasional use television and cable restoration derived mainly from the minimum time period for use and the number of units charged per circuit. Whereas a 24-hour minimum was established for cable restoration, during ICSC-8 a 30-minute minimum was established for occasional use television. At ICSC-9 (ICSC-9-4), this was reduced to a 10-minute minimum, which still applies today. The shorter minimum for occasional use television was considered necessary to promote use of the service.

Units Charged

The number of charging units applied to occasional use television was related to the amount of capacity necessary for a television transmission. At ICSC-8 (ICSC-8-6) this was determined to be 480 units for the combined video and audio portions of a television transmission, and charges were set at 480 units less the total number of units allocated for use on a full-time basis at the time the television circuit was established. This charging method was established to account for the fact that the capacity limitations of the INTELSAT I satellite required that telephone traffic be cleared from the satellite to accommodate television transmissions. To reflect the fact that some of the circuits on the satellite were already being paid for (through full-time telephony charges), television charges were set to recover a portion of costs on the additional unused capacity only.

The introduction of the INTELSAT II satellites eliminated this capacity constraint, and at ICSC-23 the number of units charged for a television transmission was a full 480 units (ICSC-23-26). At ICSC 24 (ICSC-24-3) service was approved for

the Pacific. The number of units charged in this region was 240 for a one-way transmission and 480 for a two-way transmission. It remained at 480 for the Atlantic (for a one or two-way transmission).

At ICSC-33 (in 1968), the number of units charged for a video transmission was revised to 432, with an additional 48 units charged for the associated audio transmission (for a total of 480 units). This practice remained in effect until 1979 (BG-40-3), when the Board of Governors recognized that television transmissions generally included audio within the video portion of the transmission. Thus, the number of units charged was set at 432, with one additional unit charged in those cases where the auio portion was transmitted separately. The number of units charged was not adjusted in 1973 in response to the introduction of two channels per transponder service, nor was it adjusted even though the annual charges for a transponder were, on several occasions, established on the basis of 360 units (e.g., ICSC-63-12, p. 17, and the section on domestic leases).

Charge per Unit

As noted above, originally charges per unit for occasional television use were derived from a pro rata hourly charge based on the annual utilization charge. Also noted above, charges per unit of utilization per unit of time were derived similarly for cable restoration, since these two services shared the same capacity. This tandem relationship continued until 1970. Until that year charges for both services were reduced in proportion to reductions in the utilization charge.

For 1971 (ICSC-48), it was decided to reduce the utilization charge by 25 percent. While the cable restoration charge was reduced proportionally, the television charge was not. Thus, the tandem relationship of charges between the two services was terminated, even though it was acknowledged that revenue derived from the capacity they shared was not adequate to cover fully allocated costs (cable restoration charges were frozen after 1973). In a subsequent analysis (ICSC-63-12) the rationale for this decoupling was set forth. In this document it was asserted that, although charges for both services were set below fully allocated costs, the charges for cable restoration were set relatively less below fully allocated costs because of the higher minimum period charged for this service.

On several other occasions throughout the 1970's studies demonstrated that revenues from occasional television service remained below fully allocated costs (e.g. BG-25-23 and

BG-30-31). It was believed that, by holding the television charge constant while reducing the utilization charge, occasional television service would at least move toward covering fully allocated costs (BG-7-12). By 1980, INTELSAT analyses demonstrated that occasional television service revenues (combined with those from cable restoration service) did cover fully allocated costs (based on either 360 or 450 units per transponder). Therefore, charges were reduced from $8.75 to $8.00 per minute. This charge continues in effect. (No changes in charges were instituted to account for the increase in transmission quality that has occurred over time as a result of the introduction of new spacecraft series).

One other major change in charging policy has occurred for occasional use television. In 1968 (ICSC-32-35) multi-destination TV transmission tariffs were instituted so that both originating and receiving stations were charged an amount equal to charges that would occur if only one origin and one destination were involved. Subsequently, this was changed so that receiving stations pay only one-half the rate charged to a receiving station for a single destination transmission.

As noted in the discussion of cable restoration charging policy, recent analysis of occasional services has focused on establishing a more appropriate service policy for cable restoration in an era of larger capacity undersea cables. Part of the reason for concern about the need to reserve capacity specifically for cable restoration stems from the need to reserve the INTELSAT occasional use transponders for the increasingly heavy occasional use television traffic.

DOMESTIC SERVICES

Introduction

The basic categories of domestic service provided in INTELSAT's tariff are long-term and short-term allotments for both non-preemptible and preemptible capacity. The non-preemptible service for full-time long term leases is provided on both a fully protected basis (on Primary/Major Path satellites) and on a partially protected or unprotected basis (on satellites at 307 degrees and 359 degrees). Charges have also been set for full or fractional lease of global, hemispheric beams.

Non-Preemptible Lease Charging Policy

The first such lease considered by the Board of Governors was an allotment granted to COMSAT (9/73) for service between the US Mainland and Hawaii. The rate adopted for this lease was equal to that for 360 units for full-time use. This rate was originally set by the ICSC in 1972 for a lease by Brazil. As explained in BG-29-52, the "current charging policy was established on the basis of an average fill factor over a period of time of 80% of an average assigned capacity of 450 channels. This was regarded as the average revenue yield from a global beam transponder in the international network." This rate is still in effect for a whole transponder (IV, IVA) or 36 MHz bandwidth in a hemispheric/zonal or global beam transponder (V, V-A) at 6/4 GHz.

Rate differentials also exist for other types of beams i.e., the charge for a full or fractional hemispheric beam transponder in a IV-A satellite is 1.2 times the global beam charge. BG-32-26 (3/78), which is an analysis by the Director General of long term lease services, recommended a 1.3 adjustment for a hemispheric beam (over the charge for a global beam), basing the recommendation on the fact that realizable capacity on a hemispheric beam could be 1.3 times that of a global beam. The BG decided on an adjustment factor of 1.2, wishing to minimize the difference in rates so that the use of hemispheric beams would be stimulated.

A similar rate differential exists for spot beams (1.2 times global beam charge at 14/11 GHz and 2.0 times global beam charge on an INTELSAT IV). Finally, rate for 6/4 GHz and 14/11 GHz preemptible transponders operated in cross-strapped mode contain higher rates for a partial lease (factor of 1.25) of a cross-strapped transponder pair.

Another major charging policy decision made in regard to long-term non-preemptible leases occurred at BG-39 (6/84) when the following levels of protection and associated rate differentials were introduced:

Level of Protection	Annual Rate for 6/4 Transponder (m)	
A	$1.68 m.	(Non-preemptible
B	$1.40 m.	(1.75 times Preemptible)
C	$1.2 to $1.4 m.	(1.5 to 1.7 times Preemptible)
Unprotected	$1 m.	(1.25 times Preemptible)

Preemptible Lease Charging Policy

The first preemptible lease was an allotment granted to Algeria at BG-5 (10/76). The lease was for one INTELSAT IV global beam transponder of spare capacity for five years at an annual rate of $1 million. The rate itself was proposed by the Algerian Signatory (Attachment 4 to BG-5-12) and was meant to reflect one half the expected revenue per full-time international service transponder over a ten-year period. Shortly after this allotment was granted a series of studies were undertaken by the DG at the request of the Board to assess the future demand for domestic service preemptible leases and the best way for INTELSAT to provide the capacity.

The DG undertook several studies and analyses which considered:

(a) incremental cost associated with provision of service of forecast domestic lease demand.
(b) fully allocated costs of same.
(c) cost consequences of various system alternatives (types, number and location of satellites).
(d) competitive considerations (need to stimulate demand, possible domestic systems).

The result of these studies were presented in document BG-41-26 in which the DG stressed that the charge ultimately established for planned domestic service capacity should be such to allow INTELSAT to recover all costs associated with its provision plus a reasonable contribution toward common costs. The DG estimated that the incremental cost of providing the service was $800 - $835K per transponder. Drawing upon a decision by the Board in the case of maritime service, the DG suggested an additional loading of about 32% raising the per transponder cost to about $1.1 million.

The BG ultimately recommended continuing the $1 million rate. The BG decided to lower the basic rate for preemptible capacity to its current charge of $800K.

Charges for Short Term Leases

The question of short-term lease rates first arose as result of a request from the Signatory of Australia at BG-39 (9/79). Among the factors considered was the rate being paid by long-term leaseholders of comparable capacity. Another factor was the length of commitment requested by the Australian Signatory (3-6 months) and the additional administrative and planning costs which would result. Finally, the current rates in effect for occasional use were considered since the BG did not wish to create a new offering which would erode the revenue currently being generated by another offering.

LEASED INTERNATIONAL TELEVISION CHANNEL SERVICE

The Leased International Television Channel Service was initiated in 1981. The first request for an international television lease was from the Australian Signatory. Specifically, the request was for one global beam transponder in a spare Pacific Ocean Region satellite beginning with an INTELSAT IV satellite and transferring to an INTELSAT IV-A in 1982. The request was recognized as a new tariff category, i.e., a one-way, full-time leased international television channel utilizing a global beam or equivalent capacity on a spare satellite and therefore subject to preemption.

The Board of Governors (BG-44), acting upon a recommendation of the Director General, authorized the introduction of the service utilizing spare capacity with a minimum lease of five years. The charge for the capacity was set at an annual rate of $1.2 m. for a global beam. A factor of 1.2 would apply for a hemispheric beam and a factor of 2 would apply for a spot beam.

The rationale for the tariff rate was primarily that the service should be considered as an extension of the existing occasional use television tariff. The rate was set based on the assumption of a daily use equal to three and one-half hours at the occasional use rate.

The first modification of the rate occurred at BG-46 as a result of a request from the Australian Signatory to make changes to the service offering. Specifically, interest was expressed in providing for down-link access for additional countries and to permit the point of origin of the TV signal to be other than the USA.

Pursuant to the request, the Board (at BG-46) amended the tariff to permit reception by any number of Signatories. The basic rate was lowered to $1m. per annum, with an additional cost of $125K per annum for each additional receiving country.

At BG-48 short-term lease arrangements were introduced in the tariff offering as well as an option to permit any of the Signatories participating in the lease of a channel to originate TV signals. The short-term option charges adopted were set in the same proportion to the annual charge as were the charges for short-term leased transponder service for domestic telecommunications.

The next change occurred at BG-51 when rates for service on the V and V-A satellite series were adopted. The same rates as applied to other satellites were adopted except in the case of

cross-strapped transponders. One lease rate provided for a 4/6 GHz and a 11/14 GHz transponder operated in the cross-strapped mode to provide two 72 MHz transponders at 6 GHz/11 GHz and 14 GHz/4 GHz at a cost per annum of $4.8M. This was equal to twice the rate for one 72 MHz transponder at 11.14 GHz. Another rate was approved to provide 72 MHz or 36 MHz (with a minimum capacity of 36 MHz) of contiguous bandwidth of cross-strapped capacity at a charge of $3m. and $1.5m., respectively. The charge was set to equal the 11/14 GHz capacity rate plus 25% to compensate INTELSAT for the less efficient use of space segment that was inherent in cross-strapped mode of operation.

From BG-58 to BG-60 there has been the consideration and adoption of a wide range of new video service offerings and revised tariffs for international television channel (now referred to as international video) service. Examples include:

- digital TV distribution (BG-58-35 and BG-60-17)
- integrated video/data distribution (BG-60-20)
- enhanced preemptible international video (BG-60-35)
- reversible international TV leases (BG-59-46)
- preemptible cross-strapped international video (BG-60-34)
- peak/off-peak/special events tariffs (BG-59-41 and BG-60-28)
- protection categories for preemptible international video services leases (BG-58-80 Rev. 2)

Of the new services, some are offered on a non-preemptible basis and some on both a preemptible and non-preemptible basis. Preemptible service rates are shown in BG-58-46 (Rev. 2). 1/ The tariffs in this document form the basis for all international video and INTELNET preemptible rates. The document identifies eight factors that were used to establish the rates.

- the need to stimulate demand
- the need to utilize idle capacity
- the type of satellite (IV, IV-A, V, V-A)

1/ A more extensive listing of preemptible rates is included in several documents (e.g., Attachment 1 to BG-60-17).

- type of transponder (global, hemi, zone or spot)
- type of connectivity (global, E-W, W-E, E-E or W-W)
- type of video channel (simplex, half-duplex or full-duplex)
- bandwidth
- power

Enhanced preemptible video services tariffs approved at BG-60 established a 20 percent premium above the base rates set in BG-58-46 (Rev. 2). The premium was established as an incentive to lease larger capacity allottments. Premiums were also established for cross-strapped video services. Finally, multi-destination premiums have been eliminated.

For non-preemptible video services, full and fractional transponder tariffs approved at BG-60 are equivalent to those established for IBS (BG-60-17 for digital TV distribution and BG-60-20 for integrated video/data).

At BG-59 peak/off-peak and special events rates were adopted for occasional use preemptible international video services on other than primary/major path satellites BG-59-41 (Rev. 1)). Off-peak discounts were designed "to encourage greater use during off-peak periods." Again, as with non-preemptible tariffs, the off-peak discount specified for internatinal video services is the same as that for IBS occasional or part-time use (IBS occasional or part-time rates are not comparable to those for international video services because IBS services are non-preemptible).

INTELSAT BUSINESS SERVICE

INTELSAT Business Service (IBS) is an integrated digital service for voice, data and video. Tariffs were first approved by the Board of Governors in 1983. The service offers a range of transmission bit rates from 64 Kbs to more than 8 Mbs. Full and fractional transponder leases are available as well. The service is available on a non-preemptible basis for full-time, part-time or occasional use.

General Principles for Space Segment Charges

In BG-56-50 (29 August 1983), the Director General set forth several charging principles for the service. Proposed tariffs were designed to:

- promote development and use of the service
- include discounts to reflect the efficiencies to INTELSAT of long term commitments for high capacity use
- be consistent with other INTELSAT tariffs
- reflect, as far as possible, the cost to INTELSAT of space segment capacity and the value of service to users.

IBS tariffs also were designed to (1) cover all incremental costs, (2) make an "appropriate contribution" (see p.22 of BG-56-50) to common costs and (3) ensure that, as IBS reaches maturity, revenues would "support" the additional investment necessary. Revenue projections contained in BG-56-50 demonstrated that IBS would recover at least 90 percent of its fully allocated costs during its first nine years of operation.

Charging principles enunciated in BG-56-3 (September 1983) elaborated on and, to some extent, modified those in BG-56-50. IBS tariffs, according to BG-56-3, were designed:

- to be consistent with other INTELSAT charges (although this was only a goal, since some IBS services were not considered comparable with other INTELSAT services).

- to promote the service while making a "substantial contribution" to common costs, although not necessarily cover fully allocated costs.

- ensure that part-time and occasional use charges would be set so that total revenue earned would be approximately equivalent to that from full-time capacity as well as covering higher administrative costs associated with part-time services.

IBS tariffs, as proposed in BG-56-30, were approved at BG-56 with the exception that the full and fractional transponder offerings were not approved. Full and fractional transponder tariffs were adopted (with minor modifications from those proposed at BG-56) at the BG-59. Proposed full and fractional transponder lease rates (as described in BG-58-44) were designed to "fully reflect INTELSAT's cost of providing the service" (as opposed to merely making a contribution to common costs) and be "reasonably equivalent" to charges for approved IBS service and to charges for dedicated international services transponders.

The last major changes approved in IBS space segment rates (excluding connectivity charges) 1/ occured at the 60th Board of Governors meeting. At that time, peak/off-peak tariffs were introduced for IBS for part-time and occasional users of the service. This change increased previously specified IBS rates at each transmission rate for peak periods, while allowing a 50 percent discount for off-peak periods. The change was instituted to encourage load-leveling on IBS transponders because the IBS tariffs then in effect did not adequately reflect the value of the service or the costs of providing the service during peak periods (since long-run marginal costs for INTELSAT are closely related to peak traffic loads).

Also at the BG-60 Meeting, the multiple user rate adjustment factor (RAF) - was eliminated on the basis of analyses presented in BG-60-16. These analyses determined that the multiple user RAF might be counter-productive in the development of IBS networks. In addition, its revenue generating potential was determined to be quite low.

1/ At the 59th Meeting, IBS tariffs were revised to specify a different FEC rate. Although bit rate and full/fractional transponder charges were left unaltered, the revision allowed for more efficient use of the space segment by increasing transmission throughput per unit of space segment capacity in most cases.

Connectivity Rate Adjustment Factors

Originally, three classes of connectivity were proposed (see BG-56-50), p.4):

- point-to-point (rate adjustment factor of 1.0)
- point-to-multipoint (RAF of 1.0)
- full connectivity between C and K bands (RAF of 2.5, plus the charge increased by 5 percent for each Signatory beyond two sharing the same carrier)

In BG-57-33 (23 November 1983), a revised proposal was presented for connectivity. The point-to-point connectivity option was eliminated and the two remaining classes were further subdivided into two classes each, for a total of four classes of connectivity (see BG-57-33, Attachment No. 2). The classes (and their RAFs) were:

- basic (RAF equals 1.0)
- regional (RAF equals 1.3)
- enhanced (RAF equals 1.5)
- full (RAF equals 2.3)

Rate adjustment factors were determined by taking into account a number of factors including cost of providing the service and value to the user. These RAFs were adopted at BG-57.

In BG-60-16 (p.6) it was determined that, of the four classes of connectivity, only enhanced and full connectivity offerings added value to the user. Therefore, it was recommended (and accepted by the Board at BG-60) that the RAF for regional connectivity be set at 1.0.

Earth Station Rate Adjustment Factors

The charging principles used to establish appropriate earth station RAFs for IBS have been subject of considerable discussion since the service parameters were set forth in BG-56-50. In that document, four classes of earth stations were defined for rate adjustment purposes:

- standard A, B or C (RAF 1.0)
- standard E-3 or F-3 (RAF 1.25)
- standard E-2 or F-2 (RAF 1.7)
- standard E-1 or F-1 (RAF 2.8)

The rate adjustments were to be applied, not to each earth station, as with INTELSAT full-time telephony services, but to each individual IBS carrier based upon the smallest earth station served by that carrier. This RAF scheme was adopted at BG-56.

The basic charging principle used to determine these RAFs was the fact that the transmission throughput required to operate an IBS carrier is determined by the parameters of the smallest receive antenna used with the carrier. The RAF was applied to the carrier (with the resulting charges to be shared by all Signatories involved) based on the principle of equal charge for equal service (see BG-57-3, p.44).

After approval of these RAFs and approval of their application to the carrier, other application options were also considered. In BG-59-47, the U.S. Signatory recommended that, when Signatories utilize IBS earth stations that have higher RAFs than other earth stations in the network, the higher charges associated with use of those earth stations be borne exclusively by the Signatory (or Signatories) that use them. This approach was criticized in BG-58-43 because it might result in a strong disincentive to introduce small earth stations into the IBS Network, a principal goal of the service. (Utilization of smaller, less expensive earth stations was expected to broaden the market for the service and increase demand).

Another alternative considered in BG-58-43 was the derivation of RAFs based on an assumed system-wide mix of earth station sizes. This mix could be adjusted over time to reflect actual utilization.

However, both of these alternatives were rejected in favor of a third at BG-60. As explained in BG-60-16, experience with initial IBS applications showed that some RAFs, by establishing a substantial penalty for the smaller-sized earth stations, were constraining networking. In addition, changes in space segment characteristics and communications specifications would change the technical basis for the original RAFs. This led to the analysis of alternatives to the RAFs established at BG-56. The alternatives considered were developed based on the principles that revenues should be maintained but that the proliferation of smaller earth stations should be facilitated to promote "maximum networking flexibility".

Based on this analysis it was recommended that rate adjustment classifications for earth stations be reduced from four to two, with standard A, B, C, E-3 and F-3 stations assigned an RAF of 1.0 and all other earth stations an RAF of 1.33. These recommendations were adopted at BG-60.

PRIVILEGED

Contribution of the
Director General

BG-62-15E W/3/85
8 March 1985

INTELSAT UNIT OF UTILIZATION

I. EXECUTIVE SUMMARY

1. The current concept and definition of a "unit of utilization" is a derived measure of satellite use. Historically it has been defined as that portion of satellite capacity necessary to establish one end of a 2-way telephone circuit, in conjunction with a Standard A type earth station, meeting a CCITT/CCIR service quality standard. Originally this concept was related to a preassigned FDM/FM service concept. Such an approach to the "unit of utilization" definition has become difficult to maintain as new technologies and services are introduced.

2. In the past, a number of concepts and definitions of a unit measure of space segment utilization have been explored. However, due to a variety of conceptual and practical difficulties, the definition of the unit of utilization adopted since 1965 has survived virtually unchanged to the present. This document briefly explores expanded and alternate concepts.

II. THE UNIT OF UTILIZATION CONCEPT

3. A detailed discussion of the evolution of the INTELSAT unit of utilization is contained in document BG-62-24. The current definition of the unit of utilization is a derived measure of satellite use--that portion of satellite capacity necessary to establish one end of a two-way telephone circuit meeting a CCITT/CCIR service quality standard using a Standard A earth station.

4. The unit of utilization concept serves as a fundamental measure of space segment use. Other similar uses of the space segment can then be measured relative to (i.e. multiples of) the basic unit measure. Once a rate of charge is established for the basic unit of utilization, charges for other uses can be determined in terms of multiples of the basic unit charge. If the space segment is used in a similar manner in the provision of all services, a single unit of utilization definition may be appropriate. However, this implies that differences in rates of charge among services will reflect relative space segment use as measured by the basic unit, and this may not reflect differences in the cost of providing the various services. Moreover, as new technologies and services are introduced within the INTELSAT system, greater differences in the use of the space segment are created; therefore, a single unit of utilization definition will not apply to the full range of services provided.

5. The current definition of unit of utilization is based on the amount of satellite capacity (in terms of power and bandwidth) required to establish one end of a 4 KHz two-way telephone circuit. Charges for many of the services other than telephony are established with reference to the 4 KHz telephone service standard, based essentially on some multiplier concept. This is becoming more and more difficult as the range of service offerings and technologies expand. There is a wide range of INTELSAT space segment utilization charges associated with different service applications (voice, video, data), different technologies (FDM/FM, TDMA, SCPC, SPADE, etc.) different usage patterns (full-time, part-time, occasional), different protection levels, as well as different earth station types and sizes (A, B, C, D, E, F, G, Z...). Although some rationale has been followed each time in an attempt to correlate new service applications and technologies to the basic unit, based on relative space segment use, the results are not always consistent. Each time new services are developed, INTELSAT has to undergo a difficult process in an attempt to structure consistent and equitable charges.

6. With the proliferation of services and technologies, it may be possible to define several generic units of utilization each applicable to a subset of services utilizing the space segment in a similar manner. For example, an analogue video unit of utilization could be developed that would apply to some or all video services. A digital unit of utilization could be developed and made applicable to some or all digital services. Also, an analogue voice unit of utilization could be retained and a range of services specified to which it would be applied for determining charges. Illustrative examples of three such definitions along with comments concerning their applicability are contained in Attachment No. 1.

7. Another approach is to define a single unit of utilization definition applicable to all services on the basis of the use of the primary satellite resource. This could be defined in terms of key measurable variables such as satellite E.I.R.P. and bandwidth, and may include other elements such as connectivity, coverage etc. However, these basic satellite resource elements may not relate directly to cost, and it may not be desirable to charge simply on the relative use of these basic satellite resources if efficient pricing principles are considered (BG-62-23).

8. Finally, another alternative is to eliminate entirely the unit of utilization concept and define and price each service offering individually based upon the given service's use of the space segment and other factors such as cost, demand, supply, competition, equity, etc.

This approach provides the ultimate in charging flexibility to meet market needs and the particulars of any given situation. However, it would also entail a complete revision of the current INTELSAT charging approach, which relies upon the analogue voice unit of utilization and the charge applied to it to generate the residual revenue requirement, which is net of revenues generated by non-unit-of-utilization services (such as transponder leases, video, etc.).

ATTACHMENT NO. 1 to
BG-62-15E 8/3/85

DIGITAL CHANNEL UNIT OF UTILIZATION

1. The digital channel unit of satellite utilization for the TDMA/DSI System is the measure of entitlement, secured through the allotment by INTELSAT of space segment capacity, to the use of such capacity for the establishment of a digital transmission channel for providing telephony via 8-bit PCM, data and/or other telecommunications services, as an objective, in accordance with appropriate CCIR/CCITT recommendations. This unit of utilization applies when access to the satellite is in the TDMA mode and transmission and reception is between two approved Standard A or C antennas.

2. The unit of utilization is defined to be a transmission channel of 64 Kbit/s rate on the terrestrial side of a TDMA/QPSK/DSI mode of operation.

3. Digital services utilizing modulation/access methods other than TDMA would not relate directly to the basic unit definition above. Either the unit definition needs to be broadened and made more general to include other modulation/access schemes, or else judgemental factors would need to be applied to a base price for the TDMA unit to arrive at a price for other types of digital services.

ANALOGUE TV CHANNEL UNIT OF UTILIZATION

4. The unit of satellite utilizations for analogue TV transmission is the measure of entitlement, secured through the allotment by INTELSAT of space segment capacity, for the establishment of one unidirectional analogue TV channel providing as an objective, a signal-to-noise ratio (S/N) of 49 dB as a minimum, with parameters as defined in Table 3.17 (b) of Section 3.3.19 of BG-28-72 (Standard A), by means of:

i) access to a satellite through a half global beam transponder of 17.5 MHz, and

ii) an approved earth station conforming to the requirements set forth in BG-28-72 (Standard A).

5. There are several other factors associated with the provision of a TV channel that are not included in the definition above, but affect the value to the user. These include connectivity, coverage (type of beam), and type of channel (simplex or 1/2 duplex), time of day, etc. Therefore pricing various TV services that differ in the provision of these various factors is not a straight multiple of the rate for the basic unit. The definition of the video unit could be broadened to include these factors, or the basic unit definition could be used to establish a base price, which is then modified based upon the package of other parameters that are provided.

ANALOGUE VOICE UNIT OF UTILIZATION

6. The analogue voice unit of utilization is defined as the measure of entitlement, secured through the allotment by INTELSAT of space segment capacity, for the establishment of one end of a two-way 4 KHz telephone circuit providing, as an objective, quality of service in accordance with appropriate CCITT/CCIR recommendations by means of:

i) Access to a satellite in the multichannel FDM/FM mode, and

ii) An approved earth station conforming to the requirements set forth in either BG-28-72 (Standard A) or BG-28-73 (Standard C) and all amendments there to.

7. Other analogue voice services such as CFDM could be priced relative to the basic unit of utilization in terms of the efficiency ratio of CFDM to FM in the use of the space segment.

8. An important limitation associated with this type of definition of the unit of utilization is that it does not distinguish between large and small R.F. carriers and the differences in efficiency in their use of the space segment. A refinement of the basic definition could take these differences into account, or price adjustments to the basic unit rate could be made to reflect this difference in efficiency.

PRIVILEGED

Contribution of the Director General

BG-62-23E W/3/85
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ECONOMIC BASIS FOR COST ALLOCATION AND PRICING

I. INTRODUCTION

The purpose of this document is to discuss the economic aspects of cost allocation and pricing concepts and methodologies to serve as general background information that may be useful in any charging policy study.

INTELSAT's charging policy is primarily characterized by average cost pricing on its service offerings. Some form of incremental cost pricing is also applied on some telecommunications services provided on spare capacity, including contribution to common costs. All services are offered to users on a non-discriminatory basis. The charge per unit of utilization is derived by dividing the net revenue requirement (comprising amortization-depreciation, operating expenses and compensation for use of capital) by full-time traffic estimates where net revenue requirement is total revenue estimates less revenue from non-full-time conventional services. INTELSAT follows a charging philosophy that is based on full recovery of investment and operating costs as well as a reasonable compensation for use of capital. INTELSAT derives no profit from its operation and excess revenues are returned to the INTELSAT Signatories.

In the first few years, when INTELSAT's service offering was predominantly full time-service, thus approximating a very limited product enterprise, the application of the charging philosophy adopted was easy and the pricing that was derived could be considered relatively optimal.

The operating, business and political environment under which INTELSAT is operating now, and much more so in the future, may however, require that INTELSAT reassess its philosophies, policies and procedures in all its activities, including its charging philosophy and rate structuring practices. Today, INTELSAT provides numerous service offerings to different classes of customers. In the near future, the full time publicly switched service may not constitute a significant proportion of the total aggregate service offerings and certainly this is a declining percentage of revenue in the mid-1980s.

It is important to note that the adoption of correct pricing philosophy and the formulation of sound rate structure is fundamental to the survival and growth of any organization. Pricing cannot be viewed simply as a mechanism for recovery of cost. Pricing almost always has a two way causality with service demand levels and optimal level of investment.

II ELEMENTS OF ECONOMICS IN PRICING

1. Price Level and Price Structure

For purposes of clarity, it is important to distinguish between price level and price structure. In the case of a single or limited product enterprise price level and price structure become identical. In the case of a multi-product enterprise, for example, a regulated firm that sells, a number of services that are jointly produced, to different classes of customers in less than perfectly competitive markets, there are countless alternative price structures that could, in the aggregate, yield the desired cost recovery, including a fair rate of return. In telecommunications, as in many other multi-product enterprises, the various services offered are jointly produced and because of jointedness and indivisibility, cost is not separable into the various services. The rate structure that may evolve over time, frequently on a piecemeal basis, is usually the product of general rate-making principles, practices and historical inertia, based in part on cost considerations, in part on demand considerations reflecting value of service to the user, and in part on vague notions of equity. While the rate structure established may serve in the aggregate as a workable basis for recovery of all costs, it is also important to examine whether the rate level derived is efficient and equitable. Economic efficiency and equity are frequently conflicting pricing concepts, however, international organizations like INTELSAT serving the developed and developing countries need to develop pricing levels based on a proper mix of both concepts to the extent this is possible within the legal framework that has been established from them. Economic theory provides abstract rules for an optimal rate structure given an overall cost to be recovered. However, applications of this rule, in practice are difficult because estimates of elasticity of demand are needed for the various services provided. They do not, of course, take into account either equity or the legal requirements of the INTELSAT Agreements.

2. Marginal Cost Pricing

Marginal cost is the increment in total cost resulting from one additional unit of output at the margin. In the short-run, some of the factor of production inputs are assumed fixed, while in the long-run, all inputs are presumed variable. Accordingly, short-run and long-run average and marginal costs are derived depending on the variability of inputs. Some economists argue that the rule for optimal pricing is to equate price with short-run marginal cost, which will be equal to long-run marginal cost if and only if the capacity of the facility is optimally used. But, in a world of uncertainty, and in cases where investment is usually in substantial aggregate amounts or "lumpy," rather than easily divisible, the attainment of optimal capacity use at all times is unlikely. Consequently, it may be argued that the relevant cost base to be used should be the long-run marginal cost, rather than the short-run marginal cost.

Economic theory postulates that the price of goods or services should be set equal to marginal cost of production, if economic efficiency is to be achieved. In this context, marginal cost implies the opportunity cost of resources used, which is not necessarily identical to monetary expenses reported in an ordinary accounting system.

The provision of telecommunications services are generally characterized by economies of scale. However, in the presence of economies of scale, pure marginal cost pricing will not generate sufficient revenue to cover total cost. Whenever economies of scale are present, a second-best pricing scheme is required to attain economic efficiency. This involves rate levels for individual services that are inversely related to the elasticities of demand for the service.

3. Value of Service Pricing (VOSP)

In VOSP, pricing is based on value of service to the user rather than on cost of service. The extent of utility or benefit that a commodity or service provides a consumer, and his willingness to pay for such service, are reflected in the inverse relationship between price and quality demanded for the service. Value of service pricing can improve the overall utilization of the satellite system and result in a lower overall rate level. If prices are set higher for services with high demand and relatively low elasticity of demand (e.g. services utilizing K-band spot beam transponders), a greater portion of the overall revenue requirement can be collected from these services. Therefore, lower prices can be set on services with low demand, which may stimulate additional use to generate additional revenue. To the extent overall utilization of the system is increased, prices for all services can be lower and still meet the revenue requirement.

4. Application of Price Differentiation

It is important to note that value-of-service pricing does not totally ignore the cost of service. In fact, in some cases value-of-service pricing coincides with some variant of marginal cost pricing, but more generally it is a system where cost of service at the margin establishes the minimum charge and a variable markup is added, or some form of price differentiation is exercised based upon differences in value of service to different market segments.

In order to apply price differentiation, it is essential that the enterprise is able to group and clearly identify its consumers into separable classes with different price elasticities of demand or into discrete classes with varying reservation prices. This of course assumes that an organization has some control over pricing, and opportunities for arbitrage by low-price customers are limited. Other forms of price differentiation are geographical price differentiation, price differentiation based on time of use of service and product differentiation.

In a recent study made by W.J. Baumal and D. Bradford entitled "Optimal Departures from Marginal Cost Pricing" the authors demonstrate that efficient pricing is achievable under certain conditions. According to their results, efficient pricing is not obtained by setting prices equal to or even proportional to marginal costs, but by causing unequal deviations from marginal cost in which services with elastic demands are priced close to marginal cost, and the prices of services with inelastic demands diverging from diverge from marginal cost by a wide margin. The application of the above proposition in the exercising of any form of price differentiation will no doubt entail serious policy and equity issues.

5. Peak-Load Pricing

One form of price differentiation that is being practiced frequently by electric and telecommunications administrations is the application of seperate pricing for peak and off-peak traffic periods, with off-peak period prices approaching marginal cost. Peak-load pricing is justified for many reasons. Correct application of peak-load pricing can bring about not only better utilization of existing capacity by attracting marginal users of service, but can also serve to even out the traffic load by encouraging price sensitive peak-time users to migrate to off-peak time use, thus helping to defer investment that would otherwise have been required earlier to provide additional capacity.

Peak time users are the ones that saturate the available capacity, and hence, cause the supplier of services to invest in more capacity. Therefore, on a cost causality basis, the major burden of the costs of service should be borne by such peak time users. In fact, economic theory demonstrates that the capacity cost should be exclusively borne by the peak-time users. This means that the off-peak time users would be charged the operating cost component of the charge, whereas the peak-time users would be charged for both the operating cost and the capacity cost- comprising depreciation and compensation for use of capital.

III. COST ALLOCATION CONCEPTS AND PRACTICES

Although there are several theoretical economic rationales behind pricing principles that may be applicable for multi-product firms in general and the telecommunications industry in particular, all of which are designed to obtain an efficient rate structure, the application of these principles is, however, constrained by numerous practical difficulties. One of the actual practical problems encountered is the derivation of appropriate and credible short-run and long-run average and marginal cost data. In telecommunications organizations,

this is particularly difficult because the bulk of telecommunications services are jointly derived from a common investment and as such, the investment cost, and for that matter, even operating costs, cannot be directly assigned or allocated on a causal basis to the various services. In spite of this difficulty, an organization cannot, however, escape making some cost allocations to obtain cost of service. This section will therefore survey briefly some cost allocation concepts and methodologies that are commonly used depending on the goals that are intended. Our intent is to survey cost allocation methodologies within the context of pricing structures. In order to demonstrate the problems encountered in a cost allocation process within the context of INTELSAT operations, the rest of this document will attempt to sketch the steps involved, and the various simplifying assumptions that will need to be made in deriving the cost per transponder of a typical satellite in a hypothetical satellite program. Further cost allocations will have to be made to obtain the cost of a particular service.

1. Aggregation and Disaggregation of Cost

With the exception of transponder leases, all other INTELSAT service offerings are derived from transponders. Accordingly, the cost base for such service offerings is the cost of transponders. The cost of a transponder is derived from the cost of a satellite which in turn is derived from the program cost. The starting point for the determination of a transponder cost is therefore the correct and complete aggregation of all relevant direct and indirect costs of the specific satellite program.

2. Hypothetical Satellite Program Costs

The direct cost of a satellite program is in general not difficult to determine, as such projects are normally contracted out as fixed cost contracts with some form of performance incentive payments. The cost of launch vehicles is also easily obtainable from contract documents. The main problem in this area is the allocation of executive organ indirect costs and overhead costs that are common to the hypothetical program and other activities. For purposes of illustration, further discussion on the cost allocation concept and problem proceeds assuming a program cost of a hypothetical satellite program to be $1 billion. Furthermore, it is assumed that the original contract calls for the ten spacecraft with the delivery of the first spacecraft to be three years from contract signature

date and the last spacecraft to be delivered six years from contract signature date. As per the contract, options are expected to be exercised to order two more spacecraft. A breakdown of the program cost for the ten satellites could be expected to be as follows:

i)	spacecraft development and manufacturing costs	$335 million
ii)	capitalized incentives	15 million
iii)	launch vehicle cost	480 million
iv)	other program cost	75 million
v)	Executive Organ/technical support costs	50 million
vi)	TT&C and CSM costs	45 million
	Total:	$1000 million

The question here is whether it would be appropriate to divide the above total cost by ten to get an average cost of a typical satellite, i.e., 1000/10 = $100 million. In this paper, a number of issues associated with cost allocation concepts and methodologies that invalidate such simplistic derivation of average satellite costs are briefly discussed.

To start with, the various costs listed under the program cost are paid in different years during the construction of the spacecraft spanning six years. Thus, it would be wrong to simply add up these costs to come up with a program cost, as these costs incurred at different times are not comparable. It is therefore necessary to include cost of money during construction.

The spacecraft cost of $335 million includes development costs as well as manufacturing costs. If a proper cost accounting system exists, it would not be difficult to determine the manufacturing cost for each spacecraft. The appropriate allocation of development cost to the different spacecraft may not, however, be obvious. Should the development cost be allocated to the ten original spacecraft, or to all twelve spacecraft.

The program cost includes capitalized incentives. However, non-capitalized incentives, which are paid over the performance period of a satisfactorily operating satellite, are not included. Various opposing arguments could be made as to whether or not the non-capitalized incentives, properly discounted, should be added to the program cost.

The allocation of other program costs, Executive Organ/Technical Support Cost, TT&C and CSM cost also poses another form of cost allocation problem. The question here is whether these common costs should be allocated on a per spacecraft basis or proportionately to the manufacturing costs of individual spacecraft.

It is to be noted that some of the satellites could fail during or after launch and insurance money may be collected on them. Under these circumstances, it may be questioned whether these failed satellites should not be altogether excluded from the costing consideration and derive the average cost of a typical satellite derived by considering only the operating satellites. This also brings into question the appropriate method of deriving the average cost per satellite. This is particularly relevant in the case of those satellites that are equipped with special equipment such as an MCS package. The cost of the MCS packages may therefore have to be separately identified and be allocated on an incremental basis to those spacecraft that are equipped with MCS packages. It is also to be noted that some satellites have been operating longer than others. This element may also need to be factored in to the derivation of an average cost per satellite.

3. Cost per Transponder

Once the investment cost of a given satellite is correctly established, the next step is to determine the cost of a transponder. A typical satellite may comprise 30 transponders consisting of global, hemi, zone and spot coverages, some of which have 36 MHz bandwidth and others of 72 MHz, 77 MHz and 241 MHz. The question here is how best to allocate the satellite cost among these transponders. As all these transponders are derived from the same resource, a spacecraft, the allocation problem associated with joint production becomes inescapable. In spite of such a difficulty, it may be necessary to explore a number of allocation concepts and methodologies and adopt one that is considered defensible and appropriate under a given circumstance. In the case under consideration, it may be reasonable to consider a combination of power and bandwidth as a weighting device for cost allocation purposes. Another weighting device could be the theoretical maximum capacity in terms of number of voice circuits that could be obtained from each transponder under similar conditions. As the weighting devices mentioned above also reflect elements of value-of-service by a user, they may not serve as sound proxy for cost allocation purposes. The best proxy for cost allocation may perhaps even be the TWTA power outputs of the respective transponders. Any one of these cost allocation methodologies will provide some relative cost of the various transponders, but there is no guarantee whatsoever that the derived cost is a true reflection of the actual cost incurred on a per transponder basis. It is clear that a multitude of different services are generated from a transponder, and if the cost allocation were to be extended one more step in an effort to determine the cost per each type of service application, it is quite apparent that the difficulties described above are compounded even further. The joint production cost phenomenon becomes an even more difficult problem to resolve.